

# THE DENTAL DIGEST

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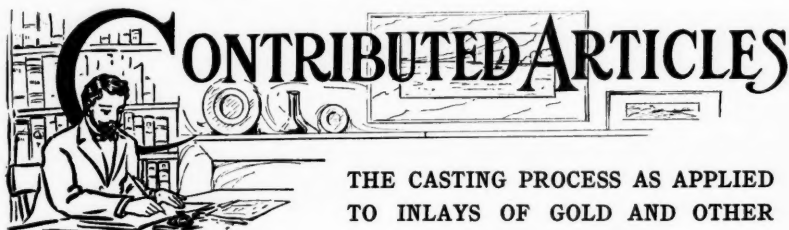
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## THE CASTING PROCESS AS APPLIED TO INLAYS OF GOLD AND OTHER DENTAL USES

*(Continued from April number.)*

J. G. LANE, D.D.S., PHILADELPHIA, PA.

IN the closing paragraph of our article under the above head in the April DENTAL DIGEST we had reached the subject of Cavity Preparation for Gold Inlays, and mention was made of various viewpoints from which this would be considered; namely, "extension for prevention," "extension for convenience," "extension for insertion, cavity form, and anchorage," "location of cavity margins," and "the marginal angle."

"Extension for prevention" in cavity preparation for gold inlays does not differ materially from the same feature in any cavity preparation. First of all, while making a survey of the cavity, outline mentally the general form that the prepared cavity should have, and in doing so give due regard and consideration to all the various viewpoints in cavity preparation that we have mentioned and will explain. Having done this, proceed to follow such outline. It may be found later that conditions in the interior of the cavity may modify the form of cavity

that had been made mentally, but keep the original mental picture in mind until such modification—if at all—is found necessary. With chisels cut away the cavity margin, following the intended outline as closely as possible. Having done this, the carious interior is now readily accessible and may be prepared by any suitable method. If now it is found that there are present enamel walls that are unsupported by dentin—they must be cut away. In a very few exceptional cases, such walls may be allowed to remain if esthetic conditions seem to require it; but generally speaking they are unsafe and should be removed.

There are certain locations in any cavity margin that are more vulnerable than others; for example, the cervical and cervico-buccal and lingual portions of proximal cavities are more likely to have recurrent decay take place than are other places on the margins. Such places must be cut back to the extreme limit of safety, and at the same time be consistent with unnecessary destruction of tooth substance. These questionable locations may thus be brought practically out of harm's way by bringing them beyond a point that is questionable, and at the same time be more accessible to hygienic conditions.

Fissures—if involved at all—must almost invariably be cut out to their extreme end, whether caries extends to the end or not. To do otherwise provides a weak place where the inlay and the fissure meet. It is impossible to finish to a fissure without having a little pit remain at the point of union; and this little pit may easily be the cause of recurrent caries. Any enamel that shows the least possible mark of disintegration must be removed and the cutting continued at such points until thoroughly sound tooth structure has been reached. The various weak places are pretty thoroughly known and should be cut back in accordance with good judgment.

In cutting away for prevention due consideration must be given the non-retentive form the cavity must have when completed. It is not always good practice to cut away tooth structure until the cavity is thus made non-retentive. This will be treated later.

By "extension for convenience" we mean that all cavity margins should be readily accessible to instrumentation: finishing the cavity margins with revolving stones, perfecting the margins of the wax pattern, and burnishing the edges of the completed inlay. In an inlay operation so much depends upon these features that too much stress cannot be placed upon the means and possibility of accomplishing them. We believe that the margins of a pattern can be finished more thoroughly by means of burnishers and other instruments than by matrices, tape, strips, or rubber. This means that enough space to allow the use of instruments must be present at all points on the cavity margin. If



the cavity margins have been shaped in accordance with this method of finishing the pattern, an absolute perfection of margins may be obtained in the wax and with it the definite knowledge that the margins *are* obtained. Sometimes after removing a pattern from the cavity it looks so different from what we expected that we are tempted to reinsert it to make sure that all is right. The cavity margins should be so accessible or visible as to prevent the possibility of surprises, or the necessity of reinsertion; and also to make possible the ultimate feature of invulnerability in an inlay operation, that of burnishing the edges of the gold inlay while the cement is still soft into such proximity to the cavity margin that all traces of the cement line shall have been pinched off and obliterated.

The cavity must also be extended to allow the easy removal of the pattern and the insertion of the inlay. It must, therefore, be without undercut in at least one direction. Indeed, the lines of the cavity walls should be quite a little divergent in the direction the pattern is to be drawn. A wax pattern may be drawn from a cavity having parallel walls or indeed forced from one that is slightly undercut; but trying an inlay into such a cavity may readily cause great difficulty by having it stick fast before being cemented. The dental supply houses have a small, cone-shaped carborundum point that is admirably adapted, and intended, for coning inlay cavities. It is made to fit all angular hand-pieces; as by that appliance it can be properly used in any cavity. Its manipulation consists in holding it in the cavity in such position that its mandrel represents exactly the line of direction in which the pattern must draw. Then, without changing its axis, the revolving stone is moved around inside the cavity until the latter has the same taper that the stone has. The cavity margins are thus easily and quickly stoned.

A chisel is not a suitable instrument for finishing inlay cavity margins. It is too likely to follow the line of least resistance, and thus produce a margin that has little irregularities in it. An inlay is hard to make fit properly into those little irregularities and never looks right. By all means the best marginal finish may be gotten by the use of revolving stones.

Small cavities are sometimes nearly circular, or nearly symmetrically oval or oblong. Such cavities should have some little distinguishing shape or feature added to prevent the possibility of trouble in properly locating the inlay in the cavity.

It is not well to rely very much upon the use of separators for gaining space for convenience of insertion. The separator is usually in the way and may readily be the means of preventing an otherwise good



inlay from being properly cemented in the cavity, and thus be the cause of failure. Nor should the cavity be so excluded that an inlay must be made without the proper amount of contour in order that it may pass the adjoining tooth when being placed in the cavity. The normality of the interdental space would thus not be established; consequently, a failure. Wedging by means of slow wedges is better practice than gaining space by separators, except in the few cases where a separator might be expected to work nicely.

For inlay operations we do not favor the extremely angular form of cavity preparation that has come so much into vogue for gold fillings during the last few years. Sharp angles at the cervico-buccal and cervico-lingual aspects of a cavity have no point of merit whatever in an inlay operation, and serve only to weaken the tooth as a whole by thus limiting the point of least resistance to fracture, to one definite place. If, instead of a sharp angle at these points, we allow a little rounded turn—say about the size a No. 7 bur would make—we have no longer present any one point of least resistance, but have distributed the weakness over quite a little area and thus strengthened the whole. This is a mechanical principle that none can gainsay. At no point on the cavity margin would we have any sharp angles either projecting into the cavity or into the inlay. Where the base and side walls of a cavity meet the pulpal wall, we would not make sharp angles, but would give them just a little rounded effect that would be approximately equivalent to an arc of a circle one-sixteenth of an inch in diameter. Angular cavities mean angular patterns and moulds. Internal angles in a mould that has been heated are weak and subject to abrasion by the force of the molten gold that is quickly rushed past, or cast against them. No matter how slight this abrasion may be, a misfit is the result. A question that is frequently propounded is: "If an inlay absolutely fits a cavity, where is there any space for cement?" We will take this up later; but for the present let us understand that in a properly seated and cemented inlay the line of cement is exceedingly thin. Even though all other stages of an operation may have been perfect, it could easily be possible to score a failure in the whole by not getting the inlay properly seated and cemented. If not seated as far as it should be we have an unduly large cement line somewhere on the surface. Knowing that the cement line is the weak point in any inlay operation it becomes necessary to favor anything that would tend toward aiding our ability to bring this cement line down to its extreme minimum, and squeeze out all the surplus that should not remain. Summing up, we would say that an inlay is more easily seated in a cavity that does not have internal angles than would obtain in a cavity that had, because

the surplus cement has a far less tortuous line to follow as it is being squeezed out, and we thus can squeeze more of it out. By this means we get the cement line thinner and thus materially strengthen what might otherwise be a weak point. Furthermore, an inlay can best be "rocked" into position (so far as such movement is possible). This "rocking" will be greatly facilitated if in the preparation of the cavity we have made no sharp angles.

A compound cavity with perfectly flat base at the cervix may enable the imprisoned cement to force the cervical portion of the inlay outward as we attempt to cement it into place. To provide a means of exactly locating this part of the inlay as it is forced into the cement, and increasing the retention medium, cut a slight oval depression in the base of the cavity at a point that is safely within the cervical margin. This depression, and the part of the inlay fitting into it, constitutes a valuable locating feature, by causing the inlay to glide exactly into position as we force it into the cavity.

Should a cavity be extremely deep, involving much of the interior of the tooth, or possibly the pulp chamber, or very much undercut, it is advisable to partly fill it with cement before finishing its margins and walls. This adds strength to the tooth while we are working upon it, and simplifies the preparation by obliterating large undercuts and allowing us to shape the interior of the cavity as we like. It also reduces the amount of gold that would otherwise be necessary. We deem this a much better method of reducing the amount of gold than by melting or cutting away a part of the wax pattern. The wisdom of any operation upon the cavity surface of the wax pattern after it has been in the cavity for the final time is questionable; the same result should be gotten by partly filling the cavity before the pattern is made. Nor do we approve of the use of a gutta-percha or modelling compound core. This method necessitates seating the inlay over a large mass of soft cement. This seems to have a tendency to float the inlay, and makes the operation of close cementation more difficult. The same conditions obtain if the pattern has been cut away or melted away.

In extending the cavity for the prevention of recurrent decay, and for convenience in making the wax pattern, and inserting the inlay, there must at the same time be considered the question of proper anchorage. The cavity form has much to do with anchorage. Except in a minority of inlay operations—wherein the inlay is not in a position to receive the direct stress of mastication—the shape of the cavity must constitute the anchorage. Union relying solely on the adhesion of the cement will not be able to withstand the violence to which we have referred. Gold inlay operations are mostly confined to large cavities in

the masticating teeth; and oftener than otherwise these are compound cavities involving a part of the masticating surface. Our repair in such cavities must be able to withstand the enormous force of mastication to which it is sure to be subjected in this part of the mouth. In addition to a force that tends to move the inlay further into the cavity in the line of the longitudinal axis of the tooth, there is another caused by the lateral or rotary movement of the mandible, by which force is exerted in any and all lateral directions. This latter force will dislodge the inlay laterally unless the shape of the masticating part of the cavity is such that displacement laterally is impossible. Therefore, in shaping the masticating surface portion of such compound cavity, some part of it must be slightly enlarged in order that the adaptation of the inlay to the cavity shall be an interlocking one. Usually this form will have been obtained by following out such fissures as are involved. If the proper form of cavity is not otherwise obtained, it must be extended purposely to meet this requirement. This "extension for anchorage," as such, need not be large nor of any great depth. The force exerted on the gold in such anchorage *per se* would be a direct tensile strain. For this reason a very small extension of gold is sufficient to anchor the largest compound cavity inlays against any force that might be brought to bear upon them. Under certain conditions a cavity may be undercut after the inlay is made, and the inlay grooved at points exactly opposite the undercuts in the cavity. By this means the cement which fills the grooves and undercuts constitutes keys, as it were, which will provide sufficient anchorage for inlays that are more or less secluded or not subject to any great degree of violence. This form of anchorage is suitable for proximal cavities in the anterior teeth; although if the cavity involves any part of the cutting edge of an anterior tooth, an enlarged extension must be cut palatally or lingually, as the case may be. In labio-cervical cavities the walls should be cut nearly parallel (except for the marginal angle), and no further provision for anchorage would be needed.

The only weak place in the exterior of a gold inlay operation is the line of union between the inlay and the cavity. Keep this as far away from the probability of violence as possible. The cavity margins, therefore, should be so located that no direct occlusion could occur on that line. This protects the enamel against the possibility of a chipped edge, and also the gold from having a burnished spot too near its edge. Hard and continuous burnishing in one spot or near the edge of a gold inlay may, in time, produce enough pressure against the adjoining enamel to break a portion of that tissue away unless it is very strong. The same condition would obtain as that which breaks a facing from a

Richmond crown, if the bite comes on the line of union between the gold and the porcelain.

For gold inlay operations the cavo-surface angle of the cavity can be much more obtuse than for any other method of inlaying or any method of filling. This angle may be made as obtuse as 115 degrees. This would leave the margin of the gold only 65 degrees. However, we find a margin of fused gold with an angle of 65 degrees is as reliable as an enamel margin with an angle of 115 degrees. This is one of the most important features in the durability of an inlay operation. By no other method of filling can we get such durability of margins both in the cavity and that which we place in it. Different parts of a cavity may seem to require different angles—and logically so. It therefore becomes a matter of judgment on our part to determine just what angle is best for a given part of the cavity—having always in mind the fact that a gold inlay has a stronger margin than any other kind of filling and may be more acute than any other. This narrow angle on the edge of the inlay also allows for great possibilities in burnishing to obtain the final adaptation of margins while the cement under it is yet soft.

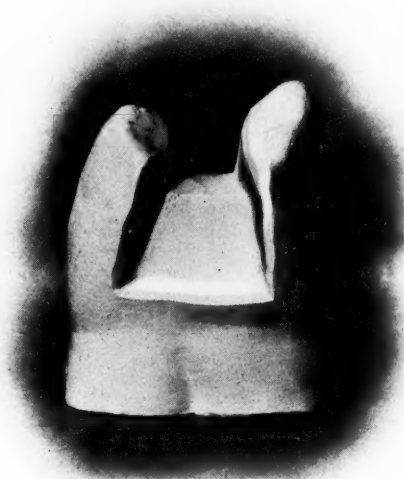
Having the cavity prepared in accordance with the foregoing details, we are ready to make a pattern for the inlay. Pattern making is just a little difficult until one has had some experience, but is an operation in which "practice makes perfect" very rapidly. In the next issue of *THE DENTAL DIGEST* we will take up the subject of pattern making, waxes suitable for different kinds of pattern making, and proceed with the inlay.

### HOW TO MAKE GOLD FILLINGS

J. V. CONZETT, D.D.S.—(*Continued*)

WHEN a bicuspid or molar presents with caries in both the mesial and distal surfaces, it is usually best to make an M. O. D. cavity and fill at one sitting. By M. O. D. we mean a mesio-occluso-distal cavity; this comprehends the cutting of a cavity in the mesial surface and one in the distal surface, and joining them by cutting across the occlusal surface of the tooth. Except for joining them together, the cavity preparation in this class of cases is the same as if there were one cavity to be filled in either surface. This operation is very extensive, and unless the operator is rapid, it is a great tax upon the patient's vitality

and nerve. In many cases it might be well to fill each cavity separately and dovetail one filling into the occlusal surface of the other. This is a plan that I frequently adopt, as I dislike to keep a patient in the chair for more than one hour at a time, and I cannot make one of these M. O. D. fillings in an hour. In case the cavities are to be filled as an M. O. D. cavity, each cavity is opened up and an occlusal step made clear across the tooth, causing the two cavities to join. Then square up each cavity, bevel the margins and fill. If they are to be filled

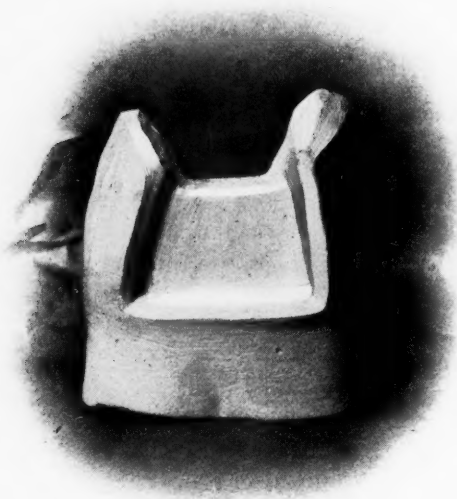


A mesio-occluso-distal cavity in a bicuspid. The distal cavity (not seen) is formed like the mesial, here shown. The cavity formation in molars is on the same principle.

separately, ignore one of the cavities and fill the other as if there were but one cavity in the tooth; then when the other is to be filled use the occlusal surface of the previous filling as if it were tooth substance; cut a step into it, carry a well-defined dovetail into the substance of the filling, and the two fillings will be effectually locked together when finished.

Very frequently, in cavities occurring in both surfaces of a bicuspid, so much of the tooth substance has been involved that there is a most decided weakening of the buccal and lingual walls of the tooth, and if it was filled in this condition without in some way protecting these walls, they would be very liable to fracture at some time. I have

had a number of very embarrassing failures along this line, due to not protecting the buccal and lingual walls in weak teeth. An accident of this kind is all the more to be deplored because, very frequently, it is not possible to repair the damage in any way but by crowning the tooth. If we carefully study the conditions as they present we will rarely make this mistake, for teeth with frail buccal and lingual walls can be filled in such a way that the walls will be strengthened rather than weakened. When a bicuspid presents with cavities so extensive that the buccal

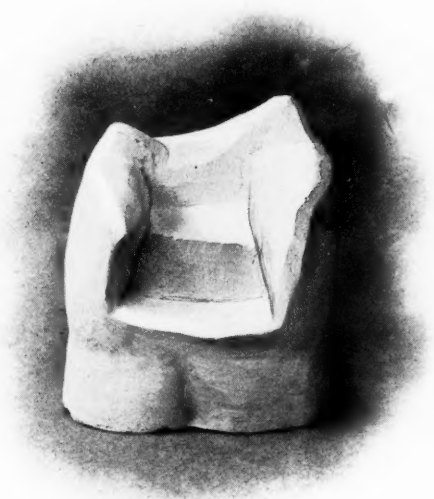


Mesio-occluso-distal cavity in a bicuspid with frail walls. Buccal and lingual walls cut down and bevelled to be built into the gold.

and lingual walls are dangerously weakened, prepare the cavity as usual, with flat seats and parallel walls, and when cutting the occlusal step make it very broad, carrying the margins of the cavity well up into the apices of the cusps; if the walls are very weak, cut off the cusps with a carborundum stone sufficiently far to enable you to build a good mass of gold over the cusps and thus protect them. In doing this it is well to grind a bevel on the margins of the cusps, so that when the gold is built over them it will effectually lock the walls of the cavity into the filling, making it impossible for them to break.

This same plan may be adopted when the same cases present in molar cavities, but it is much more rare to find a molar that will need

such extensive cutting in order to preserve; and if it did, I should hesitate to advise a gold filling. That would be a place for a gold inlay, and I do not think that we would be justified in subjecting the patient to the ordeal that a filling would entail when an inlay could be made that would answer the purpose. We must remember in operating upon the teeth that we are operating upon living tissue and that the easier we can perform our operations, consistent with good work, the better. While in the past I have made these extensive operations, calling for twelve to fourteen sheets of gold to make the filling, and con-



Mesio-occlusal cavity in molar with weak buccal and lingual walls.

suming from two to three hours of the hardest kind of work, I shall never do it again.

\* We will also find weak walls in cavities in the mesio-occlusal or disto-occlusal surfaces of the bicuspid and molars, even when the opposite surface of the same tooth is perfectly sound. In these cases, it is also advisable to protect the weak walls by cutting the cavity so that the gold shall cover and protect the weak walls. In short, whenever in filling any tooth you find that any wall of that tooth is too weak to withstand the stress that is to be brought to bear upon it, cut until you reach good, strong tissue, and so build your gold over that wall that it will protect and build it into the tooth and filling.



## "A PLEA FOR DENTAL EDUCATION AND EXAMINATION IN OUR PUBLIC SCHOOLS"\*

By J. F. BIDDLE, D.D.S., PITTSBURGH, PA.

The expressions of surprise and incredulity of many intelligent and even highly educated people when we advise the cleansing and the care of the teeth of their children are indications that they consider the teeth to be organs which should be able to take care of themselves. If a child's first teeth be decayed, chewing is painful and neglected, and thus the habit of swallowing the food whole is formed; indigestion, stomach and other disorders may follow. On the other hand, if decayed and painful teeth be removed prematurely, the permanent teeth are liable to be irregular and crowded, and thus their efficiency, durability and beauty are marred. If the minds of the children be inculcated with these principles, would not the movement be fruitful of good?

### EDUCATION AND CO-OPERATION OF THE PROFESSION

Dr. Grady of Baltimore, states that the movement to inaugurate dental examination of school children has met with countless failures, which he attributes to narrow-minded members of our own profession, rather than to public opposition. A reference to the statistics in states where dental examinations have been inaugurated should convince the most skeptical of the crying need in our own state of such legislation. Before attempting to secure it, however, would it not be well for the local dental societies to aim to educate their members to a realization of the importance of this measure to the coming generation and to strive to impress upon them the necessity of unselfish and united action? Otherwise, we may discover after months of hard work that some narrow-minded or misinformed brother looks upon our well-meant efforts to inaugurate this movement, simply as a means of personal gain; whereas it is only by the unselfish sacrifice of time, money and energy on the part of those interested that the work may be carried on successfully. In the city of Baltimore the remarks of a dentist to a member of the city council, that the effort to secure dental examination of school children was simply a scheme on the part of some of the dentists to give them an opportunity of placing their cards in the hands of the children at the expense of other dentists, killed the bill and caused the members interested to receive a very cool reception at the hands of the council.

\* Read at the March meeting of the Odontological Society of Western Pennsylvania.

#### APPOINTMENT OF COMMITTEES

Persons having this matter in charge should aim to reach the highest authority in the district or city under consideration; otherwise they may antagonize the Board of Control and thus fail to secure their recognition and support. Necessary facts and statistics should be amassed for this purpose and placed before the Board in a concise and convincing manner.

#### APPOINTMENT OF DENTISTS

In the appointment of dentists for the purpose of making dental examinations in our public schools, let us aim to secure the services of such men as are willing to work several hours per week, gratis, for those school children whose parents are unable to pay for dental services. Such action on our part ought to be sufficient proof to the public of the earnestness of our purpose and prevent their viewing our plan for dental examination in the public schools merely as a means for the enrichment of certain individuals at the expense of the people. The neglect of the teeth and mouth is one of the earliest and most fruitful causes of disease. This fact, alone, should urge the advisability of making dental hygiene a matter of public instruction and urge us to persevere in our efforts, even though they seem unappreciated, and not to rest content till we see not only medical, but dental examination as well, inaugurated in our public schools.

#### REVISION OF TEXT-BOOKS

An examination of the text-books of our city on the subject of Physiology and Hygiene shows them to be very deficient with respect to oral hygiene. In a book of from three to four hundred pages, the subject of "Teeth" occupies less than a half dozen pages, from which I shall quote as follows: "In each set of eight, the two nearest the middle of the jaw have wide, sharp, chisel-like edges fit for cutting, and are called incisors; the next correspond to the great tearing or holding teeth of a dog and are called canine or eye teeth. The incisors and eye teeth have one fang or root and the others have two or more fangs." It further states that children should be instructed to remove the particles of food from between the teeth after each meal with a quill or wooden tooth-pick. Preservation of the teeth occupies sixteen lines, of which the aforesaid strong-arm method of cleaning the teeth takes up four lines. In another text-book of some two hundred pages, two and one-half pages are devoted to this subject. Care of the teeth

occupies two and one-half lines, reading: "They should be brushed every day, and cared for by a dentist, if unsound. Good health and good looks depend much on them." This work designates the cuspids as canines and, in parentheses, dog teeth. It states, further, that in dogs and cats the canines are very long and pointed and adapted for seizing and holding prey. Two paragraphs follow on the care of the teeth, from which I quote as follows: "Good manners forbid the public use of a tooth-pick, but on the earliest privacy after a meal a wooden or quill tooth-pick, or, better, dental silk, should be employed." In this work the roots of the teeth are mentioned six times, and each time designated as fangs. Could the average child be expected to take intelligent care of these important organs after such a course of instruction? Is there not, then, great need of the revision of text-books on Hygiene so that they may contain practical knowledge of oral hygiene on the care of the teeth and mouth?

#### THE DISTRIBUTION OF PAMPHLETS

If pamphlets were prepared for distribution among the parents of the school children, might they not be of great educational value? Such pamphlets should necessarily be brief and couched in the simplest language. A large booklet will often be thrown aside, whereas one of a few pages, presenting the subject in a concise manner, will be preserved and read and re-read with interest. For instance, the general public should know:

*First.* That diseases of the mouth and decayed teeth exert a great influence on the general health.

*Second.* That cleanliness of the mouth prevents their decay.

*Third.* That decayed teeth taint the breath.

*Fourth.* That the temporary teeth of a child should be retained and cared for until the time of the appearance of the permanent ones.

*Fifth.* That the growth and health of the child depend upon the retention of the temporary teeth.

*Sixth.* That the permanent teeth should last throughout life. Do they? No? Why not?

*Seventh.* That the decomposition of particles of food around the teeth is detrimental.

*Eighth.* That the presence of tartar causes the teeth to loosen.

*Ninth.* That the teeth should be examined regularly, at least twice a year, to insure their being kept in good condition. These and many other practical truths ought to be impressed upon the public and the younger generation.

SPECIAL INSTRUCTION IN ORAL HYGIENE

All students in public schools, high schools, normal schools, colleges and hospital training classes, should receive special instruction in oral hygiene and best methods of preserving the teeth. The need for dental examination should appeal strongly to teachers who are in a position to realize its importance and influence on the health of the children, and we would derive much help from their hearty co-operation. Where do human beings congregate more closely than in the school-room? Where, then, more need of care to prevent the spread of disease? What place more appropriate than the school-room, therefore, for inculcating in the minds of youth the principles of oral hygiene and the necessity of cleanliness of the teeth and mouth? While lectures to the general public might be productive of much good, they would reach a comparative few, whereas a course in oral hygiene would permanently affect the entire generation. That such a course would react beneficially is beyond doubt. Then, too, does not the question belong, primarily, to the schools? Is it not their duty to arouse society to intelligent thought and action on better modes of life? To advance knowledge? To urge higher standards of health and cleanliness? Let us, then, reach out after the young generation and place before it these higher standards. As one writer has remarked, "We are living in the present, but must think in the future and strive to build for those who are yet to come. He who does not is certain, sooner or later, to find himself hopelessly in the past." Conservation of the public health is no less important than conservation of the national resources of our country; and the most promising field for the conservation of the health of the rising generation is impressing upon them in the school-room (in their youthful days) the value of the teeth and their certain preservation by proper and regular care, particularly during the period of adolescence, as decay of the teeth is preeminently a disease of youth.

According to the public investigations abroad during the past years, the alarming condition of children's teeth everywhere is due, not only to neglect, but also to heredity, hence an additional cause for hygienic precautions. The statistics furnished are largely those of school children, therefore, especially suggestive to us. Dr. Jessen reports that an examination of the teeth of 100,000 school children from different German states showed that from 81 to 99 per cent. had diseased teeth and but 1 per cent. normal, healthy mouths. A dental examination by Dr. Ritter of the school children of Berlin showed that 90 per cent. had defective teeth. Dr. Cunningham reports that a dental examination of 10,517 school children (12 years of age) of England and Scotland

revealed 35,000 diseased teeth; 14 per cent. had sound teeth. In another examination of 15,000 children (between 6 years and 15 years), 95 per cent. showed presence of dental caries. Dental examinations conducted in St. Petersburg, Russia, as early as 1879, showed that 80 per cent. of all the inhabitants of that city had decayed or defective teeth. Since, then, in the higher Military Schools of Russia, dentists have been established, as also in the United States Army, where every known means is employed to preserve these organs so essential to good health. In 1896 Russian dentists made a formal petition to the Minister of the Interior for the organization of a regular dental hygiene department throughout the empire. Thus far, dental and medical examinations have been introduced into Russia, Germany, Japan, England, France, Belgium, Italy, Sweden and Denmark. In 1908, in Mexico, from July to December, the teeth of 250 school children were examined by Dr. De La Para, and of this number all needed dental attention. In Butler, Pa., out of 1,015 school children examined, 994 had teeth needing immediate attention, 353 had never used a tooth-brush, 17 had a regular dentist, 325 had never visited a dentist, 21 required no dental attention, 18 used a family tooth-brush. In Erie, Pa., out of 1,411 examined, 1,271 needed attention. These statistics indicate the condition in neighboring communities. To us, the needs of Pittsburgh should be more pertinent. The American dentist has the reputation of ranking first among the dentists of all countries, but the facts just cited show he is not in the lead in this movement. An investigation of the movement in the United States shows that for the past ten years the question of dental and medical examination in our public schools has been agitated in different parts of the country with varying degrees of success. For the most part the movement has been a hard struggle against great odds. Along with the great progress our nation has made in commercial and business life, public improvements, improved sanitary conditions, etc., a point of excellence has been reached never before attained, and the steady demand of educated people is for the best. Notice briefly the progress made in the department of public health. That there is a steady increase in the power and authority of those officially in hygienic control must be granted, else how account for the passage of pure food and drug laws, milk and meat inspection; or for the fact that Massachusetts has so purified her public drinking water that for a whole year there has been no typhoid fever epidemic attributable to any public supply of water; for the passage of radical laws which forbid the marriage of imbeciles, epileptics, and persons afflicted with contagious or venereal diseases; the diminution of the diphtheria death rate by the free distribution of antitoxin; the

slow but regular yearly increase in tuberculosis. All these and many more are powerful evidences of our national progress. Such being the case, have not the past ten years been a time of preparation for the receiving of the best that we can offer, and is it not our duty to humanity to prove to them the vast good that would result to them and their children from improved sanitary oral conditions and urge their trial? To my mind, what we need most in this matter is the power of united action, and if we unselfishly work for the good of the cause, no doubt our hopes will ere long be realized.

To sum up let us bear in mind:

*First.* The necessity of impressing the profession with the importance of our undertaking, and of securing their co-operation.

*Second.* The appointment of committees to approach the proper authorities to secure dental examination of school children.

*Third.* The appointment of dentists to conduct such examinations.

*Fourth.* The revision of school books on Hygiene so that they may contain practical knowledge of oral hygiene and the care of the teeth and mouth.

*Fifth.* The distribution of pamphlets containing brief directions for the care of the teeth.

*Sixth.* Special instruction in oral hygiene to students in normal schools, high schools, and hospital training classes, and the delivering of lectures on this subject before Teachers' Associations, colleges, graduating classes and other educational bodies.

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## THE OTHER SIDE OF THE PATENT QUESTION

CECIL CORWIN, D.D.S., HAYWARD, CAL.

IN an article appearing in current journals entitled, "Ethical relations of patent rights," appears the following:

"Hence the professional sentiment as formulated in ethical codes unreservedly condemns the physician or surgeon who fails to place freely at the disposal of his brother practitioners any process, method, or agency he may have found useful in the treatment of human disease. That this ethical principle should apply to dentistry as well as to general medicine can hardly be questioned."

"That all processes for relieving human suffering should be made unpatentable by legislative action."

There is more than one aspect to every case and one should look at this subject from more than one standpoint before he puts himself on record in such an important subject.

It is very high-minded and generous to utter the sentiment above quoted and the human heart responds to the sentiment embodied therein.

It is greatly to be regretted that there is the other and more practical side of the question, yet we are compelled to take cognizance of it, and we must, whether we desire to or not, treat the subject from the practical side and take the existing conditions into consideration.

This is a very important subject for many reasons. First, because each dentist or physician is compelled from necessity, to make his living and provide for others dependent upon him. His capital is his knowledge and ability and his income depends upon what use he makes of them. No one will pay him a fee unless he renders a service. If he rendered no service of value no one would sustain him. His brother practitioners would not do so. They are in the same boat.

Suppose now that by dint of hard study and experimentation he makes a discovery. Would the brother practitioners repay him for his trouble, expense and sacrifices? Or would they say to him that he had no ethical right to receive reward for his labor? Does the profession take care of him in old age or of his family in case he is prematurely disabled or dies? Let us see.

To the first question we find that the professions do not voluntarily and spontaneously reward a discoverer or inventor in any substantial manner unless he is protected by a patent. Recently a specific case occurred which illustrates the truth of the foregoing statement. We are using and making money out of a process for filling teeth, which was invented and perfected at great sacrifice and expense by a brother dentist. He is being denounced, by some members of the profession who have more zeal than charity, for making an effort to derive some pecuniary benefit from the patent he has been granted by the United States. I, for one, am heartily ashamed of the way he is being treated, and I hope that I may be the means of turning the attention of a few to a better appreciation of this class of cases.

Is any one injured by the discovery or invention of a better means of relieving human suffering? Certainly not. Then why do we say to an inventor or discoverer: "Here, that belongs to us; relinquish to humanity your rights, we will utilize it in relieving human suffering." Would it not be more honorable to say: "Here, we will pay you a royalty on your discovery and enable you to retire and devote more time to research work and rest, as we will use your discovery and make our daily grind less tiresome and more efficient. We will charge our patients a fraction more for our work and put it aside for a definite time for your benefit."



Which is the more honorable?

I wish to call the attention of all fair-minded men to the fact that the Constitution of the United States provides for the protection of inventions, by means of patent rights.

Patents are granted to inventors of any mechanical device which shows originality. It gives copyrights to authors, musicians, artists and designers. It gives protection to trade-marks and processes for various purposes. It gives patents or copyrights for medicinal or other prescriptions.

If it were not for the protection thus given, confusion would follow. No one could engage in any enterprise with the assurance of continued business. Practically all manufacturing enterprises are based upon the protection granted by the patent laws. To bring to pass any such a propaganda as expressed in the resolution of the Pennsylvania Dental Society to abolish all laws granting patents to processes or inventions which are for the relief of human suffering, would be to revolutionize our system of doing business, and could not help bringing chaos to many an institution.

What equitable right has the Pennsylvania Dental Society or any other body of men to say that no one shall receive the protection of the patent laws if he invents a crutch, an ear trumpet, a pair of eye glasses, an obtundent for sensitive dentin, a method of filling teeth, or a dental tool? They are all for the relief of human suffering. There is absolutely no sensible excuse for the propagation of such ideas. Let us be charitable, but let us be sensible enough not to be led into the expression of ideas from which we cannot readily extricate ourselves.

Let me cite a case to show the ingratitude of the dental profession. There is now living in San Francisco an aged dentist who designed block teeth. The value of this has been amply demonstrated for many years. He gave the invention to the profession. He is now and has been for many years dependent upon relatives for the bare necessities of life. Has the dental profession ameliorated his condition? Indeed not. Few are living who know of him or his valuable work. Yet we are using the product of his genius and do nothing for the old man to help him. Would it not have been better if we had paid him when the service was rendered than to have waited the call of charity in his old age?

It is time for the professions to awaken to the fact that genius should be rewarded. Our patent laws are good. Let us not disturb them by impulsive recommendations such as that referred to. The argument, that every agency directly or indirectly remedial in character should be free to all, is very sympathetic and humanitarian in

character. We might just as well make our appeal to include bread for the hungry and clothes for the shivering.

Let us be charitable to the living and make it possible for any man or woman of genius to make more than they earn with their hands. As it now stands the only legitimate field for a professional man to make a stake is by means of invention and discovery in his own field. Let us not throw any obstacle in the way of genius. This is far more generous than to exploit a living member and place flowers on his grave and spread resolutions of condolence on our books.

Many dentists are given to writing about how much of their valuable time is devoted to promoting the interests of the profession. They would have us believe that they were practising dentistry for their health. I believe in professional spirit and fellowship and a certain amount of charity. Let us be charitable with our fellow members, and enable any one who exhibits genius to make what he can for himself and family and retire if possible before old age and infirmity creep inevitably upon him.

I am personally acquainted with a large number of dentists, and I cannot remember one who is working for his health. We are all earning our daily bread by the perspiration of our noble foreheads. Very few indeed have a surplus of energy or cash to be philanthropists.

In the light of the foregoing facts as set forth, let us answer each one for himself whether or not we are committed to the policy as expressed by the Pennsylvania Society.

I, for one, cannot endorse any such impractical sentimentalism.

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## RELATION OF DENTAL DISORDERS TO TUBERCULOSIS

F. Morley, in *British Jour. of Child. Dis.*, says: It is well known that mouth breathing is a contributory cause to phthisis, but not so well known that mouth breathing is often due to dental causes. Very frequently, enlargement of the cervical glands, the most common cause of which is bad teeth, is probably at first simply inflammatory, becoming tuberculous by infection later. Such infections may certainly travel by way of carious teeth, though it is not suggested that this is the most common route. A septic root, even if painless, should never be allowed to remain in a child's mouth. The author thinks that dentists have become too conservative in their attempts to save carious teeth, by sacrificing practical to cosmetic considerations. He particularly insists that before sending children to sanatoria their mouths should be put into good order. Failing that, each sanatorium should possess a dental surgeon whose post would be no sinecure.



**"Rendering Professional Services;  
Not Selling Materials"**

**NINETY-FIVE PER CENT. DENTIST ; FIVE PER CENT.  
BUSINESS MAN**

"A man's business is his part of the world's work, his share in the great activities which render society possible."—MATTHEWS: *Getting On in the World*.

It is only natural that when the student graduates and begins the practice of dentistry, his course should be largely shaped by the training of his earlier years. If during those years some one else paid his bills, his studies were probably all from books, and his experiences practically all social. Probably high school followed grammar school for him, and college succeeded high school. Home and friends completed a circle that effectually sheltered him from the rude activities of a world whose greeting to the worker is, "You must conquer or fail."

The dentist coming from such a past will be splendidly equipped for the ends of his life, the beginning and the finish. But his training has left him unfitted for the middle portion of his life, that period in which he *must* secure patients, must master the general plan of business economy, and must advance his fees to a competence-producing basis.

These activities are those of the business man rather than of the professional. They employ those faculties which are developed only by contact with the world when one has something at stake. To bear himself modestly and yet so that he shall produce in many minds the conviction of his ability and worth; to make his services attractive to possible patients and sell them at remunerative prices; to live well and yet save money; to pay bills promptly and secure financial standing; these are business activities. This period forms the connecting link between his home-protected, school-trained youth and the affluent old age of which he dreamed. If the old-age dream is to come true, it *must* come as the result of the activities of this period.

Fortunately, these activities can be developed after he begins prac-

tice, if they were not included in his earlier training. They require the exercise of very ordinary talents; so ordinary, indeed, that many much-schooled men rather despise them as common, perhaps as low and unworthy. Yet the man who thus scorns to use them is always and for all his life, a financial failure. Because the diagnosis is not agreeable to him, he will not accept it. He does not see that just as business activities would be ineffective in professional work, so professional activities alone will not avail in the business area of practice. In a thousand cities in this broad land are dentists whose professional abilities are of high order, but whose business abilities are largely undeveloped. Right before their eyes other dentists with less technical ability enjoy far better incomes, honestly acquired. The 95 per cent. professional man sees this and despises the means by which the others rose. In lofty intellectual superiority, he pursues his lonely way, serving with great skill those few patients that are his. His means are narrow, his credit limited, his self-denial is necessarily almost constant; and his family's self-denial is even more constant. They lack very many of the things which his skill and industry should provide.

Dentists who hold this frame of mind should awake to the fact that professional skill alone does not and cannot insure financial success. People are attracted and held by qualities which are not professional. If patients whom the dentists meet socially steadily pass their doors and go in next door to the dentist who conducts an equally honorable practice, it means that the dentists whose doors they pass and whose reception-rooms are so constantly empty are distinctly inferior in some respect; nearly always in business ability. It means that they fall short in dress or address, in manner or management, in personal power or persuasiveness, in courage or conviction.

The only sane procedure for the dentist who is thus passed by is to quit belittling the means by which his honorable neighbor gets business and to seek out the faults which prevent him from getting patients. If he cannot do this for his own sake let him do it as a necessity for his family's welfare. Regardless of his own feelings, he owes it to his family to be financially successful.

Let him look first to his own person and see that his clothes are modern and that he looks prosperous. However low may be his funds, he must *look* prosperous. Let his linen and the details of his toilet be as nearly immaculate as possible.

Then let him train himself to optimistic views and a modest but confident manner. He is conscious that he knows his profession; let his manner reflect the knowledge. Let it say, *without words*, "I know just what your case requires; put it in my hands, and it will be especially

well cared for." No gloomy, taciturn, forbidding or timid, hesitating manner can say this.

Let him not be brow-beaten as to fees. Some very skilful men can be talked or bulldozed down, down, down as to fees, till the patient gets the work at his own price. Such an attitude does not reflect past successes; it spells weakness and uncertainty, and patients know it. It never commands respect.

Let the dentist see that every part of the office is always clean. Neatness and cleanliness cover a multitude of shortcomings in the quality of furnishings. Humble furnishings, well kept, will be stepping-stones to more pretentious furnishings in future days.

Let the dentist mingle with his fellows in proper public places and gatherings. Let him hold his head erect and take the position to which his education and his character entitle him. Let him not fear to modestly voice proper opinions when opportunity offers. Let him make himself felt as an intelligent force and not merely as an animated lump of clay.

Such men should quit waiting for the world to cease its rush and bustle and take notice of them. The world is too busy. It has too many affairs of necessity or pleasure to pause and note or employ those meek souls who efface themselves. True modesty is a virtue when used in moderation; in excess it is a vice, or at least a barrier to progress. The only way to get the world to turn into your gate is to get out and politely jostle it until it takes notice because you compelled it.

What are some of the results of this lack of business ability? Here is a very practical one. At a brilliant dental gathering recently the writer met a man who knew the financial standing of nearly every dentist present. The writer said to him, "How many men do you see whose check you would take for \$500?" He glanced up and down the long tables where dress suits abounded. Finally he said, "Six." And this was the measure of the financial achievements of that group of 250 dentists. Their professional achievements were the pride of all who knew about them.

Another result is that dental fees, in general, are far too low, because the poor business man in dentistry has put them down, thinking thereby to get more business. In thousands of offices the price for an amalgam filling is fifty cents. Leaving out of consideration the cost of amalgam, no dentist whose rent is over \$5 per month can properly prepare a compound cavity and put in a decent filling for that price and net more than a day laborer's wages. Gold fillings at \$1.50 each fall in the same class. These dentists are engaged in selling materials; not in rendering professional services at remunerative prices.

A third most serious result of the lack of business ability is that many young dentists whose funds give out are misled into undesirable methods of practice-getting. A little knowledge of business-getting would have brought in enough money to tide them over until they were established.

If we are 95 per cent. professional men and only 5 per cent. business men, let us with diligence and patience set about altering the formula for our own benefit and the welfare of any who depend upon us. Let us increase the business-getting and business-building elements. It will certainly take time and hard work; there will doubtless be failures and discouragements. Yet we have everything to gain and need lose nothing.

Let us descend from the high peaks of "hard up" disdain wherefrom we watched the other fellow succeed. Let us be modestly and attractively self-assertive and divert a liberal share of the golden stream toward our own coffers. And when some one else looks down on us, we, from the standpoint of prosperous content, may charitably perceive that he is only 5 per cent. business man; and that isn't percentage enough.

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#### READ THE ADVERTISEMENTS IN THE DENTAL DIGEST

You get this magazine at the present subscription price only because the advertising it carries pays the greater part of its production cost. For the \$1.00 per year which any individual subscriber pays, the advertisers pay nearly \$10,000. That is, the subscription price of any one reader represents only 1/10,000 of the cost of producing the magazine.

The earnings are put back into the magazine to make it more helpful. When the editors want expensive illustrations, as in Dr. Lane's article this month or Dr. Conzett's, the money for them comes largely from the advertising receipts.

You can help make the magazine bigger and better by helping increase its earnings. To do this read the ads—they are well worth it. Write for the literature they offer if you want it and mention THE DENTAL DIGEST when you write. This evidence that DIGEST subscribers read the ads will increase the revenue and make greater things possible to the editors.

## PROFESSIONAL BUSINESS

*Second Paper*

BY FREDERICK CROSBY BRUSH, D.D.S., NEW YORK

IN connection with the above title it may be well to again explain that "the exchange of anything for something constitutes *business*" and that the rendering of skilled service, by a specially trained man, for a remuneration constitutes *professional business* in contradistinction to commercial business, which consists of the purveying of goods and chattels. For the purposes of discussion we may arbitrarily divide *professional business* into two distinct parts. The *technical*, or that which relates entirely to the service or operation; and the *business* side, which has to do with the disposal of such technical services and the remuneration to be received therefrom. It is of this *business* side of a professional practice that these various papers are intended to treat.

In some unaccountable way, in the earlier days of the dental profession, the idea became widespread that it might not be considered strictly ethical to openly discuss the purely business side of a practice. In fact it has been quite the fashion for some of the older and financially successful men to rub their hands and, assuming a very grave and dignified tone, assure their young admirers that they never even thought of money in connection with their work, but that their minds were wholly absorbed in the detail and poetry of the operation—and a lot more of such nonsense. The receiving in a dignified way of a suitable recompense for services rendered, is just as much a part of good ethics and entitled to a liberal discussion, as is the detail of any given operation. That there has been but little discussion of *business* subjects in the past is true, but letters from men in all parts of the country indicate that an awakening is taking place and that the importance of a more thorough knowledge of business principles is being appreciated.

This leads to the question, From what source should a young man expect to receive a knowledge of the business principles connected with a profession which he is about to enter? Why, from the college that gives him his technical training, of course. But do you realize how lax the colleges are in their treatment of this important subject? Has it ever struck you how one-sided their lecture courses are? The professors lecture to the students for four years on how various operations should be performed, but probably not one hour on how to *obtain* or *retain* the patients requiring such operations. Is it any wonder that we have advertising dental parlors and unethical men of all descriptions



when every year there is a horde of graduates turned loose upon the public, each one eager to establish a practice and recoup the depleted state of his finances, and with but a faint idea of what is meant by true professional honor, dignity or courtesy, and without any idea that he, personally, is under any obligation to the profession upon which he is entering; and that it has a right to demand that he shall conduct himself according to its accepted code? Generally about all the young graduate realizes is that he is now entitled to enter upon his chosen life work and the sooner he gets about it the better; that expenses are heavy and recurring with deadly regularity, but patients do not clamor for his services quite as frequently as he had hoped; that he must get money or go under. It then probably dawns upon him that while he has been taught how to render his services he has not been given the slightest idea of how to dispose of them to the best advantage; and without a previous good moral and business training to sustain him, he begins to slip along the lines of least resistance. Many times he does not know that he is violating any of the accepted professional laws until he finds himself ostracized by other practitioners and denied the advantages of membership in professional organizations.

I contend that more men go wrong through ignorance than from inclination; that if men are taught how to maintain themselves respectably they will try to be respectable; that if but one side of a man is developed he cannot be well balanced. If these things are true, our colleges are very largely to blame for the many professional derelicts that society is burdened with. The colleges promise young men a training which will fit them to hold a respected position in society; they accept the students' money and consume four of the best years of their lives and then turn them adrift with a load of superficial technique, but without moral rudders to guide them to port.

This going professionally wrong and drifting along unethical lines, by many men, could be greatly obviated if the dental colleges would establish a series of lectures on matters that pertain particularly to the business side of a practice. Such a course of lectures would be of inestimable value to the young graduate about to engage in the struggle for a practice and a decent living; and would probably guide him straight through many a storm of adversity and despair.

The lectures might cover to advantage such points as the following:

*First.* The choice of a location. How to judge cities and towns and the probable future of a dentist so located. The amount of population considered necessary to support a dentist comfortably. What may be reasonably expected from various kinds of communities in the way of fees, collections, etc. How to select a location for an office in any

given community. The value of a proper entrance and approach to an office. The question of light and how it may be utilized to best advantage. Dignified and acceptable signs.

*Second.* The office itself. Various ways of arranging for a reception room, dressing-room, operating and laboratory rooms, etc. The appointments in general. What to avoid. The operating equipment required at various stages. How to select and arrange the same.

*Third.* The value of an attendant in receiving and caring for patients; the prevention of blackmail and general damage suits; the answering of telephone calls and correspondence; assistance during operations and in the laboratory, etc.

*Fourth.* The personal and social conduct of the dentist. How to make valuable acquaintances and social connections. Church, lodge and civic work.

*Fifth.* The personal appearance of the dentist. The value of a good tailor, haberdasher and barber. The care of the hands. The use of tobacco and liquors.

*Sixth.* How, when and where to advertise. The forms of advertising considered ethical in various communities.

*Seventh.* Business stationery in general.

*Eighth.* Bookkeeping, charts and records. The value of a "tickler" system. The rendering of bills and collection of accounts. Insurance and how to adjust it. Expenses and how to figure the cost and value of time.

*Ninth.* Office hours. Vacations and when to take them. The advantages and disadvantages of keeping office hours on holidays and Sundays.

*Tenth.* Fees and how to apportion them. The acceptance of the standard of fees maintained by other practitioners or the possible value of disregarding it.

Such a course of lectures could be elaborated, and if delivered before the senior classes just before graduating, would prove of great value and assistance to them in establishing a practice upon strictly ethical and financially successful lines.

To men who have found their niches, with their early struggles almost forgotten and peace and contentment ahead of them, such a course of lectures may seem unnecessary; but if they will pause and recall their own early experiences, look about them and note the condition of their less successful brothers they can scarcely help but realize how sadly such good business training is needed and that in the college would be the best time and place to receive it, *and that all of the colleges should provide it as a part of the curriculum.*

## AN EXCELLENT SYSTEM OF COLLECTIONS

Surely the suggestions given in the letter below should prove helpful to dentists who are puzzling how to get their money. The dentist is entitled to his money as promptly as anyone else, but many get it only after long delays. This was illustrated by the experience of a certain dentist. A lady came to have a tooth, which was already filled with cement, filled with gold. As she left the office she said "Maybe before I come here I'd better pay Dr. S. for that filling. I've owed him for it over a year." The dentist said "My terms are cash." When she came she brought the money and let Dr. S. wait.—EDITOR.

APRIL 6, 1909.

*Editor DENTAL DIGEST, New York City.*

DEAR DOCTOR: Regarding your inquiry as to what dentists may think or how they may act about collecting fees and extending credit, I shall not bore you with what I *think*, but perhaps if I tell you what I *do* it may be of interest and help some one who is at present trying to decide what they ought to do and how.

I opened an office for myself in September, 1907, after several years spent in a nearby "Dental Parlor" (suppose I ought to be ashamed to tell it, but I will, just the same), and beginning, have continued as follows:

The first time a patient presents (since the change), I consider them new patients without exception. Greet those I have met professionally before in as cordial a manner as I can, of course, but in a business way treat them solely as new patients. Ascertain their wants, make appointments, and if necessary, and it often is, settle upon the approximate cost of such *services* as they may desire; I do not discuss *terms* until I am ready to do so.

After settling other matters, I take from my supply of cards an unfilled one, ask for the full name and address of the patient, write such information on the card as has been definitely settled, and if the question has been asked, state my terms by saying "Now Mrs., Mr., or Miss (always call the patient by name), my terms are," etc. If no question as to terms has been raised, I state my fees, or the amount already decided upon, to the patient while writing on the card; upon finishing the entries, look the patient squarely in the eye and calling him by name, say, "This work will, as I have already said, cost you approximately"—or as follows—giving my fees for the various services or the amount previously agreed upon. "HOW MUCH DO YOU CARE TO LEAVE TO-DAY AS A RETAINER (or deposit)?" The patient seldom fails to state some amount, upon which I accept the

fee, say "Thank you" (many practitioners forget that), "as fast as I finish each operation I will tell you how much more is due," and dismiss them with this indirect information as to my terms clearly impressed upon their minds. To those who say they do not care to make any payment upon their first visit to the office, I say it will not make a particle of difference; *they may bring* such amount as they care to upon their next visit to me.

To those of my new patients whose general appearance indicates they belong to the "send the bill, we are financially responsible" class, I put the question, "Do you care to make the *usual* deposit, or do you prefer to give references and have me render the bill later?"

I have never had a patient take offense at either of these questions and should not care if they did. As long as they have a right to ask what fees I exact, just so long I consider I have a right to state my terms and ask the patient in advance, either directly or indirectly, whether they care to accept them or not.

There are other methods, and better money-getters than these. I employ this manner of attending to the financial end of my work because it is as far as I feel I can go without running the risk of degenerating from a professional man to that of a salesman, both honorable callings, but to my mind not a good combination. I find that patients, when once told plainly what terms I exact, on returning for further dental services, group themselves into two classes: Those who expect to accept the terms and come prepared financially to do so, and those who wish to know if it will be necessary to abide by them. The former class I do not need to discuss; the latter, if I have found them to be, plainly speaking, "honest," I inform them that as *old* patients, it is not necessary, but that they may pay me upon completion of work if they care to. If I have any doubts as to their standing, I state I am sorry, but I cannot vary the terms except that as *old* patients I do not require a deposit, but only that they pay for work as completed.

For those of my patients who desire to establish credit I have the rule that references must be either an "old" patient or a bank, and I always tell these credit patients upon completion of work that I shall render my account upon a certain date, usually the first of the following month.

Such few uncollected accounts as I have (in spite of this method), I invariably give to a collector, after notice to the patient, within thirty days after the end of the second quarter after completion of the work, and do so whether the account be large or small. This serves to notify patients that unless they want to pay for their dental work they had better go elsewhere.

This method I have found to work as follows: Out of a total operative business of nearly \$20,000 since applying it first I have had approximately \$200 of uncollected accounts accrue, with some of those still possible of collection. An account of my prosthetic work amounting to at least half that amount, in addition, shows losses of just \$30 to date. Will not discuss this further; have stated the facts as nearly as possible and stop with the mere suggestion that should anyone wish to adopt a similar method without changing their location, it seems to me it could be easily done by merely changing any present method of keeping records and accounts, and starting from that change as a foundation, apply it the same as I have in my new location.

Yours very truly,

C. E. CAULKINS.

Bridgeport, Conn.

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### SEEN THROUGH THE PATIENT'S EYES

This is the first of a series of articles written by patients telling what they think of dentists and their offices. The community takes a man's measure pretty accurately, whether he is a tradesman, a preacher or a dentist. Sometimes we go through life ignorant of this measure-taking. We do not know how others see us. If we, as dentists, could see ourselves through the patient's eyes, it would help us correct many faults, some of which may have stood in the way of the success we were trying so hard to deserve.

These articles are not merely critical; they contain many useful hints. If they hit you, do not condemn them or get angry till you see whether they are right; because these are the views of the people who carry the money you must have. If you don't deserve it from their viewpoint, some other dentist will get it. To learn if they are right, go out of your own office, forget that you are a dentist and then come back with the viewpoint of a patient. I refurnished my office once on a hint like that, and it paid.

Next month there will be more of these articles. May they help us all.—EDITOR.

Do the majority of dentists realize the impression they create before they are seen?

Judging from the number of slovenly, ill-kept offices it is safe to assume that some of them never give the matter a thought.

Just why this is so is a source of conjecture. But it does seem that an intelligent man starting in any kind of business would take into consideration every detail of whatever business or profession he had in view.

The dentist wishing to locate may be a man of means or otherwise, but in either event the same rules apply: cleanliness, first-class work, up-to-date equipment and clear-cut business methods.

We will suppose a stranger in a city or town needs the services of a dentist and is not recommended to any one, is it not reasonable to presume that he or she will select a clean, attractive-looking office in preference to one reached through a dingy, dirty hall and stairway?

Some dentists cannot afford to have an expensive office, but every dentist can have a clean one no matter how small the office or unfashionable the locality.

Patients get their first impression on entering the hallway and outer office; if these are immaculately clean the first step into their confidence is taken. But this is not all by any means. The inner office or operating room must reveal a man just as immaculately clean as the office itself; he must be well groomed in every sense of the word, his close physical contact with his patients demands it; there is nothing so obnoxious to most people as the odor of perspiration, or a breath reeking with alcohol, stale tobacco, bad teeth or a disordered stomach, and it is absolutely essential to eliminate them if the practitioner is to have any degree of success.

It is also essential to have a first-class, up-to-date equipment. Some dentists maintain it is not necessary; however, that may or may not be true. But close observation has proven that it does inspire more confidence, admiration and boosting than antiquated furnishings, and if a patient has confidence in his or her dentist they usually go out of their way to recommend him to their friends and acquaintances which means the practice is sure to increase.

On the other hand, regardless of how capable a dentist may be in every branch of his profession, he will never attain any great success with obsolete equipment and uncleanness, because nothing will drive patients away quicker than fear of a clap-trap, rattley foot engine or a stagnant, unsanitary cuspidor.

If instead of occupying so much of their time wondering why patients do not keep appointments, continually grumbling and complaining of business being bad, they pay some attention to keeping themselves and their office clean, well ventilated and modern, the importance would soon be realized in increased patronage.

The utmost privacy in an office cannot be too strongly advocated, as most patients being human have a tendency to give vent to their suffering during an operation, yet are humiliated by the presence of disinterested parties. Or they may wish to refer to their account, yet

do not care to discuss it before a third person. Again, if a little more consideration were shown patients and they were seen immediately upon entering the office instead of having them wait an unlimited time unnoticed, it would often prevent them from becoming nervous or going away.

Therefore cleanliness from the ground up, modern equipment and consideration of patients combined with conscientious work are the best of all impression-creators and practice-builders.

#### EXPERIENCES WITH CITY DENTISTS

*To Editor of DENTAL DIGEST:* May I, an outsider, be permitted to contribute to the DIGEST my views as a patient with the earnest hope that they may be of help to some dentists?

For the past three months I have been suffering from a tooth with a bad root condition, which has caused me to spend much time at my dentist's, and many days I have had to wait for him. On these occasions it has been my custom to read some of the periodicals always at hand upon his center table. In looking over THE DENTAL DIGEST, I read "The Value of First Impressions to the Dentist." I then became much interested, for I was a patient, and as such I have had some strange experiences; so I thought by relating them to you, possibly they might convey a gentle little lesson to those in need of such. Dr. Brush asks, "Have you ever wondered what were the first impressions of a new patient upon meeting you in your office? Are you sure you would like these impressions to be the lasting ones?" "Do the surroundings and incidentals that create these first impressions convey just the ideas that you would like impressed upon patients that visit you for the first time?" I think I can answer, from one patient's viewpoint, if you will permit me to relate my experiences with two or three dentists I have had the misfortune to meet in their offices once and *once only*. Could those men know what impressions they made upon your humble servant (and others), surely they would change their ways and surroundings.

My first experience was about ten years ago. I had a toothache with no decayed tooth that I could see. But the ache was there all the same. I had no preference as to a dentist, for I was a stranger in New York, but a friend advised me to try some one who, it was said, had been very successful with a friend of hers. "Then you have no personal knowledge of him?" I asked. "No, only what I heard; but I will inquire and let you know, for there are dentists and dentists." A few days later I received the following information: "For goodness' sakes, don't go to Dr. R——. I made a mistake. He is simply awful.



He did not do her work at all; it was some one else. She did call upon Dr. R—— for an appointment; she never made one and for the following reasons. She found he had two small offices, a front one and a little stuffy back one for a waiting-room; this was overfull with all kinds of broken-legged chairs, and a sofa with frayed-out cushions upon it; the floor was covered with a greasy-looking carpet and up in one corner was stored a sewing machine; the glass over the mantel was so thick with dust that you never could have seen your face had you tried. K—— says she would have backed out on the impression already received from the general appearances, but he had seen her enter and she knew he would hail her as she passed. Presently he let out his patient, telling a little girl to take the now vacant chair. K—— made a motion, but with rather a grand air he waived her back, saying, 'I will see you in a few minutes,' while he looked at a letter which laid on the dusty, grimy-looking hall table, after which he rubbed his eyes, scratched his head, ran his hand through his beard, and without washing his hands, made an attack on the little girl's mouth. That was too much for K——. She stole to the door and fled. So you see you do not want to go to *him*." I did not indeed.

I heard incidentally that there was a very clever dentist in Brooklyn, "rather eccentric, but a good dentist." I went. As to his eccentricity, if what I saw passed for eccentricity, he was eccentric indeed. One look as he came forward in a greasy, half-worn Tuxedo coat very dusty and crumbly from a late breakfast, sufficed for me; but the position was awkward; I had to make an appointment, and while he looked over his book, which seemed to have plenty of open dates, I took stock of his "eccentricity"—dirty finger-nails, hair long and rumpled, soiled collar and cuffs, the latter much frayed out, an unsavory spectacle altogether. To make it worse, he was crunching something. I had noticed, too, whilst waiting for him, that the same towel used by the first patient was transferred to the second. I made the appointment, but I never kept it.

Later I found a dentist quite up in every way to my standard, and I think there are more like him. This man has two large offices, his own little office, also a smaller one, where a patient can rest while a filling is drying without having to go out among the waiting people (and, by the way, he never has a crowd waiting. Does a dentist who keeps his engagement book straight need to keep his patients waiting? I do not know; I should think not; my dentist has but a few waiting, and I happen to know that he has a lucrative practice). The floors of these offices are waxed and shining; the centres are covered with good, but not expensive rugs, there are a number of comfortable chairs—

several of them are rockers—a sofa, *not* a couch, in each room (the couch is in the little office and is covered with linen crash as also are the cushions that lay on it); there are several tables upon which you will always find pleasant reading matter, including the daily papers. There are a few very attractive engravings on the walls, and mirrors over the mantels.

Behind a screen in the back room is a small table over which hangs a glass; a pincushion and some hairpins lie upon the table. There is no brush—for who would use the “house” brush for his hair? Clean shades cover the clean windows and over them spotlessly clean, dotted muslin curtains hang. Delicate white mull sash curtains are also hung before the lower window panes in the operating office. There is a young girl, very nice, very sweet and clean looking, in attendance, who removes everything that is unpleasant as soon as each patient vacates the chair, so that the next one shall not see what she has to go through. All is perfectly clean; the towels are sweet smelling, and every patient has a fresh one whether the last one used is soiled or not.

My dentist is not handsome except in the sense of “handsome is as handsome does,” and in this light he is par excellence. He is what one would call wholesome looking. He *looks* clean; his hands and nails are all that they should be; he wears a mustache, but no beard to tickle your ears, eyes and nose as he works; in this, as Dr. Brush says, he has “a financial asset.” He wears “white duck coats,” and he does not need to hang out the “diploma” in the waiting-room; he carries his credentials always with him—in his face and manner—they show that he knows his business. Much of this has been possibly acquired by study and a desire to please; to do his best for his patients and by so doing he has done well for himself.

You say to him, “Doctor, will it hurt much?” With a pleasant smile he will answer, “I hope not, but I can’t promise. I’ll be as gentle as I can.” And you have confidence in him, and if he does hurt, you bear it, and feel that he has done the best he could. I think a patient would much rather know what there is to bear than to be assured that it will be merely a “pin prick” and then receive a jab that will nearly make one cry out “murder” (and I know this has been done). In short, he is just what a gentleman of my acquaintance says he is: “A blankety nice fellow all through and knows his business from A to Z.”

# BROTHER BILL'S TRAVELS



Brother Bill is a dentist. He has a fine practice and enough money so that he enjoys leisure and travel. Bill often visits dental offices and dental societies. He writes his brother John things which no one but an independent, fearless dentist would dare say.

*(He attends a local society meeting, doesn't like the paper and gets stirred into the discussion)*

BUFFALO, N. Y.

MY DEAR JOHN: I had my innings last night all right enough, and I've been divided between amusement and mortification ever since. I attended a meeting of a local dental society, and a chap read a paper on the subject of "Successful Practice." He was a pleasant appearing chap with a thin, intellectual face, and when he rose to speak I was reminded very strongly of Dr. McB. Well, sir, he hadn't been going more than ten minutes when he hit on one of my raw spots, and from that time on he hit them on an average of once a minute.

I enjoyed his paper until he took up the financial side of practice. I knew in a minute that he didn't know anything about a successful practice, and probably never would. He said that in estimating successful practice the money which is made should not be considered; that a practice might bring in large sums and not be successful, which, of course, is true; and that it might be successful in the highest degree and still not be highly remunerative, which, of course, is not true. He wouldn't have put it so inelegantly, but it translated itself to my mind like this, "that if you've done a good grade of dental work and arrive at old age with no means of support and without physical ability to longer earn your living, you've been successful." I noticed that very few were giving him any interested attention, the others seeming to pay him attention merely in a polite way. In fact, I don't believe anybody else gave him half the attention I did, because I wanted to get up right then and there and tell him a few things I'm sure he didn't know.

At the close of his address, the presiding officer rose and uttered a few neat words, which he probably didn't mean at all, but which had

been carefully prepared to make the essayist feel good. One or two dentists criticised the paper in the usual way, by complimenting the author and then largely agreeing with him. I felt sure that one of them didn't really approve of the paper, and didn't wholly mean what he said in approval of it, but he did not have quite courage enough to come out and cross all the society traditions by saying the things he really believed. When the second critic sat down, the presiding officer threw the paper open for general discussion and here's where I got into the game.

After waiting a minute or two to see that nobody else was ready to say anything on the subject, I got recognition from the chair and opened my remarks in a mild way by saying that the paper of the evening was lopsided, that it had left out some of the most important elements of successful practice, which I should be pleased to call to the attention of the meeting, and that it advocated a wholly mistaken and wrong idea about the financial side of practice. Well, I hadn't gotten any further than this, when every man in the room was sitting up and taking notice. I saw a smile go round, but that didn't stop me any because I knew just what I wanted to tell them.

Then I told the society about Dr. McB——, of whom the essayist reminded me strongly. I told them about his excellent moral and religious character, his courteous manners, his excellent qualities as a parent and father. Perhaps I drew it pretty strong right in here, because I was working up to a contrast which I wanted to make as effective as possible. Then I went on with a description of his professional ability, his extensive knowledge, his unusual technical skill and his conscientiousness. You know him well enough to know it would be pretty hard to exaggerate these things, because he certainly is a wonder in these ways, but I stated them for all they were worth; this was the top of my grade and from here I started for my climax.

I painted an accurate and detailed picture of his financial conditions. I told how entirely lacking he was in business-getting ability, how few were his patients, how much too low were his fees compared with what they should be, and how cramped was his own life and the lives of the members of his family. I mentioned the two daughters who are teaching, and who are so strongly suspected of having to help support the family. I told how few were the family pleasures, as we estimate pleasure to-day, without travel, without vacation and without even the home luxuries.

Then I related how he had been doing skilful dental work for over twenty-five years, that he was now past his prime and that his practice could never be any bigger than it is; but that it must grow less and

less as he becomes physically infirm. I closed this part of the talk by asking them, "Is the dentist successful who has conducted a highly skilful practice all these years, who has reaped from it almost no material benefits for himself or his family, that a clerk in a store could not provide, and who faces old age and physical infirmities, with no savings and no assured income?"

I didn't give them a chance to answer this, because I wanted to answer the question for them myself; and I went on to show that there are two parts of dental practice, the professional side and the business side, and that practice is not broadly successful which is not successful in both. I agreed heartily with the essayist that practice is not successful simply because it makes money, but I denied positively that a practice was successful which did not provide comfort in the present and plenty for old age. I insisted that a dentist who completed a normal period of practice without having provided for himself and his family in the future, unless some catastrophe made this impossible, was a failure, and that no professional etiquette or courtesy of speech could cover it up.

Right here I happened to glance at the essayist of the evening, and saw that he was red in the face, and seemed to be covered with mortification. I decided right then that I had said too much, and with a closing word or two, sat down. When he rose to close the discussion he seemed to find it somewhat difficult to speak, but said he felt called upon to differ with the last speaker, because he believed that the finances of a dental practice had nothing whatever to do with its success. He believed that success was dependent absolutely upon the degree in which the dentist was true to the best traditions of the profession and the care and skill with which he served his patients. Also that financial returns were so far secondary that they should not be considered.

On the way home, I found out from my host, who had taken me to the meeting, what made the essayist red in the face. It seems that in describing Dr. McB—— I had described that man to a "T." Of course I hadn't meant anything of this sort; but there are so many of these chaps in the profession that one is liable to run onto them anywhere.

I wish I had some way of blazoning from one end of this country to the other the fact that the practice which is not financially successful is only half successful. I do not mean that merely making money is a sign that a practice is successful; not at all. But I do mean to say that the practice which does not provide the dentist and his dependents with comfort now and protection in their old age is a failure, no matter how skilful the operator may have been. The notion that a dentist

must live and die poor; that he should get along on a day-laborer's hire, or the wages of a clerk; that he is not entitled to pleasures and even luxuries, and that he should not provide himself with plenty for the future, unless something beyond his power prevents, is all foolishness and is all dead wrong. I know these things are not so, because every once in a while I meet some dentist who has waked up to the importance of the business side of his practice and is making himself independent, not by the exercise of unusual ability, but merely because he has used his financial common sense.

I'm sorry I hurt that chap's feelings, but I know that it's a good deal more pleasure to practise dentistry when you can see the bank balance increasing annually. And I believe a dentist who is making money has more heart for good work than one who is not. That's my experience anyway.

Yours,

BILL.

## Regarding Past Subscriptions

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**W**E purchased *The Dental Digest* on January 1, 1909, with a clean slate. The former publisher, Dr. J. N. Crouse, was to collect for his own account all past subscriptions. We have nothing to do with these or the matter and manner of their collection.

Our policy is to avoid any possible misunderstanding. To this end every subscription to *The Dental Digest* must be paid in advance or charged through a dealer. At the end of the period paid for, we stop sending the magazine. There can then be no aftermath.

THE DENTISTS' SUPPLY CO., Publishers



## POST-GRADUATE STUDY\*

BY ARTHUR D. BLACK, B.S.M.D., D.D.S.

Here is a plan impressive in its simplicity, tremendous in its possibilities for good. It will smooth many a pathway for the beginner in practice; it will keep many an older man up-to-date; it will broaden many a horizon which might otherwise be formed, through too large a part of the year, by the office walls. All success to this plan; all credit to its originators. May it be copied everywhere and may each of us be willing to do his little, but necessary part.—EDITOR.

. . . WHILE the society is working along all of these lines and expects to make some progress in all during the present year, it has selected for its principal task the establishment of a post-graduate course of study, and for this purpose has adopted a plan which is attracting quite as much attention throughout the country as did the work of re-organization, and promises to be of even greater value in its effect on the advancement of dentistry. That which recommends this course most is its practicability—the fact that it will place the literature of dentistry in such form that the man who is not inclined to be much of a bookworm can, as occasion demands, find quickly information on any point that may come up in his daily practice. It is believed that the working out of this plan and the use of it by the profession will count for much in the measure of success attained by each practitioner.

To attain the greatest measure of success, a dentist should employ every means within his reach to give his patients better service. This should include a good office equipment and never-ending search for more knowledge and better methods. When a dentist who graduated twenty-five years ago visits one of our modern dental schools, he marvels at the present equipment and wonderful advantages offered as compared with the schools of his day, yet we all know that the new graduate of to-day has most to learn after he begins practice; in fact, his first case will often present something entirely new to him. And almost every day will bring some new thing to the man who keeps his eyes open, but it should be remembered that most of these things which are new to him,

\* Read before the Northern Illinois Dental Society, October, 1908.



are not really new, but have been seen and written about often by others. It is the most natural thing for one who encounters a condition of which he knows little, to seek light on the subject, that he may give proper treatment and be wise the next time a similar case presents. Now we come to the important subject which I wish to present, a plan by which the dentist can find information on any question that may come up in his daily practice.

At the present time it is almost impossible for one who is so disposed, to get accurate information from our literature. It so happens that we have only a limited number of reliable books on dental subjects, most of our literature being published in journal form and, therefore, quickly lost because of its inaccessibility. As the literature of dentistry stands to-day, even the man who has a large library of our best journals, can make little use of them, for the reason that it is very difficult to find articles on a particular subject when he wishes them. This is, I believe, the principal reason why more dentists have not kept their journals and do not refer to those which they have kept. A journal is read more or less carefully when it is received, much as is a newspaper; then it is gone.

The post-graduate course, which is being inaugurated by the Illinois State Dental Society, will, as preparatory work, do three things for the members of the society throughout the State.

*First.* All articles in selected dental journals will be classified according to subjects. A card will be written for each article and the cards will be sorted into groups for each subject. For example, the cards for all articles on alveolar abscess and its treatment will be in one group; the cards for all articles on gold inlays in another; for gold fillings in another; crowns in another, etc.

*Second.* The articles will be read by selected men, and the most important points in each will be noted. Cards on various subjects to be studied during the coming year have been assigned to different members of the committees. Each man is expected to read the articles on certain subjects and make notations of any valuable or important points. The reports of the various members of these committees will then be combined and published in the form of a series of questions on each subject, with a memorandum of the places where answers to each question may be found in the journals.

*Third.* Dental libraries are being established in about forty cities throughout the State, so that the journals used for the course will be accessible to most of the members. Two circulating libraries will also be established for the convenience of other members.

For the planning and management of this course, a committee of

three was appointed by the State society. This committee decided to confine its work for the present to certain branches of operative dentistry, prosthetic dentistry, dental pathology, and materia medica and therapeutics. In dental pathology, the etiology of dental caries will be taken up first; in operative dentistry, the prophylactic treatment of caries, to be followed later by cavity preparation and filling; in materia medica and therapeutics, the therapeutic treatment of dental caries, mouth washes and tooth powders, and prescription writing will be considered first; in prosthetic dentistry, the shrinkage and expansion of plaster, the taking of impressions and bites will be presented first, followed by studies of occlusion, occluding frames, etc.

Certain dental journals, the *Cosmos*, *Review*, *DIGEST*, *Items of Interest*, and the transactions of the State society, each of these for the years 1903-1907 inclusive, have been selected for use this winter by the committee. Sub-committees have been appointed to read the articles in these journals on the subjects mentioned. Each committee will make up a list of questions, answers to which may be found in the journals mentioned, and after each question will be notations indicating where answers may be found. It is the intention that these committees will select the important points in the various articles, so that a dentist who wishes to look up a particular thing will be directed to it at once, and can often get the views of several writers on that point without having to read any superfluous matter or even be bothered to look in an index to locate an article on the subject.

To state all of this more briefly in another way, I might say that the dental literature in a few selected journals for the past five years will be classified, read, digested, the valuable parts of each article noted, and the volume and page number of each important statement placed after a question which it answers. It should be understood that a very limited portion of the field of dentistry and only a little of our literature can be covered during the first year, but it is the hope that this work may be carried on year after year, gradually including more subjects and more journals. If this can be done, it will enable any member having the lists published by the committee to immediately locate the views of a number of writers on any point on which he wishes information.

Let me give an illustration of the practicability of this plan and its value to a dentist in his daily practice. Since I began writing this paper, a dentist who had used too much pressure in forcing carbolic acid through a root canal in the treatment of an abscess, causing some necrosis of the bone, and who had been sued for malpractice, came to me for a suggestion as to how he might fight the case. He was told that he

should be able to show that a number of dental authorities recommended the forcing of carbolic acid through the root canal in the treatment of abscesses and that he was following their teaching, and I was able at once to refer him to dozens of articles on alveolar abscess, giving him the volume and page number of each, that he might look for his evidence.

So far, I have only spoken of the use of this course in those cases in which the individual wished to look up some special thing. The greatest use of this course should be a broader one. It will offer to the dental practitioner a systematic course of selected reading on each subject presented by the committee, enabling him to get at the essential points in a large number of articles in the least possible time. One can thus carry on a definite course of post-graduate study at home.

In view of the fact that many dentists have not formed the habit of studying the literature by careful reading, it is probable that for the present the greatest good to the greatest number will come from the use of this course by our component societies. The arrangement of the course in the question form is especially favorable for this, as it enables a programme committee to arrange for the presentation of a subject in a variety of ways. The committee may select a certain subject to occupy one session of a meeting, and they may ask one member to write a paper and others to discuss it. The essayist can then select whatever questions he wishes to discuss, and should be able to get the material for his paper from the references to those questions as compiled by the post-graduate course committee. The men who are to discuss it have the same opportunity.

The programme committee may choose another plan. They may select ten or more questions on one subject and assign each of these questions to a different member, asking that he look up the answers to the particular question assigned to him. In this way a number may take part in the programme, the work of preparation is light for each, and yet the whole will constitute a valuable and interesting presentation of the subject. This plan commends itself for the reason that it enables the member who would refuse to write a paper to do his share in the programme with credit to himself, and this several times repeated, should develop the ability to present a more comprehensive writing covering an entire subject. The man who is willing, in the beginning, to do a little, should soon develop habits of study and thought and expression which will place him on the active list in the progressive work of the profession. This should also develop the power to think and watch carefully while operating and to note those things occurring in his practice which will be of interest to others. . . .

It is up to you and me to "get busy" and do something besides pull teeth and make rubber plates.

I believe the proposed course of study under discussion is the grandest step forward ever taken by a dental society; but whether it helps the average man to a higher plane of knowledge will depend on the man himself. You can't make the horse drink, though you may lead him to water.

This course of study must be taken hold of with enthusiasm and persistence by component societies and individuals, and then it will be an immense power for good.

If you lack enthusiasm, attend the meetings of the State society, and you'll get some.—*Dental Review*.

## THE PERSONAL EQUATION IN DENTAL SOCIETIES\*

BY DR. P. M. WUILLEMIN

Here are a few paragraphs every member of a dental society should read and apply to himself. Some of the members who are brightest in mechanical ideas sit quiet when a little practice of the sort mentioned below would enable them to confer great benefits on their societies. We need ideas and experiences. If you can't give them smoothly, give them roughly. But give them.—EDITOR.

. . . AND then we have the man who has the interest of his society at heart and wishes that he might do something for its betterment, but through diffidence he does not know how to do it. If he gets the floor, he is unable to express in a manner satisfactory to himself and feels that he has made a failure of his attempt and placed himself in a position open to ridicule. So he refrains from any further outward display of what he considers his weakness; and that feeling so becomes a part of him that while he often has the desire to add something to the discussion, he desists. At the very thought of attempting to say anything, his heart seems to come up in his throat. Now, *he* is the material which, if properly handled, will make a member of whom the society will in time be proud. This type is in the majority; these men do not have the necessary confidence in themselves to make the start. To them I would like to say this: Writing a little paper and reading it before the society will be the opening wedge; every subsequent effort will drive the wedge deeper, and as progress is made the blows will become more

\* Read before the San Francisco Dental Association, December 14, 1908.

powerful, until resistance is impossible and the obstacles will yield. You then will be a mature society member, useful, able to speak, of good judgment, and willing to work.

The ability to speak on the floor without preparation will come as a result of the work undertaken and persisted in, and you will find that the thing which at one time looked like a physical impossibility has become subject to your will, to be called upon at any time. It is true that not all men are gifted with oratory, but there are very few who, by constant, persistent effort, cannot attain the position where they can get up and state in a few well-chosen words what they have to say. Few men have been given the gift to take part in discussions or present new subjects in an intelligent manner from the very outset of their affiliations with organizations. It is in most cases an acquired accomplishment, not often a God-given gift. The ability to put down on paper or to speak outright the thoughts which come to one, is but the result of practice, even as the clever manipulation of the plugger or of the excavator is the result of practice. Do you remember how clumsily you tried to use the automatic plugger the first time you were introduced to it? Did you have no difficulty in learning to operate a foot engine without movement other than that of the leg working the treadle? Then why do you expect that the ability to express yourself in public will come to you without effort on your part?

An idea, no matter how small, although so familiar as to be common to you, may be new to the man sitting next to you and might save him a great deal of trouble, were he but familiar with it. But he, not being a mind reader, cannot know that you have something which might interest him. Would you but put that idea on paper and present it when the opportunity offers itself, you would certainly benefit yourself by developing that which is latent within you and possibly render your associates a great service. The very fact that you "have" an idea shows that there are possibilities, and it is for you to develop them. Because that idea is old to you, do not think that it is old to all. There are many men who, while having ideas of their own, have never happened on that little idea of yours, and really they are only waiting for some one to show them wherein they are deficient in that very thing which, on account of familiarity, you hold so cheaply.

So to this class of members I say, take a brace and try to see if you cannot accomplish what others are doing around you. Put your thoughts on paper as they come to you, and then leave them alone until you have the opportunity of reading them, which opportunity you must make for yourself if it does not come as soon as you wish it. Tell the president that you have an item of interest that you would like to present when

convenient, or if, in the course of business, there is a time devoted to items of interest, get up and read your little piece. You will be nervous, of course; who has not been so? But you will be surprised how much easier it will be the next time you try it. Keep right at it. The only man who will ridicule you will be the one who cannot do as well, and, for fear of showing his ignorance, does nothing. You have learned the art of dentistry, which it took you three years of systematic college work to accomplish. You have since improved your methods, because, when you tried to do a certain thing and it did not turn out right, you have tried again, either in the same way or by using other methods, and thus you have arrived to the point where you feel that, in a measure at least, you are master of your profession. Did you do it all at once? Of course not. It has taken time and patience and worry. And so, in the matter of developing yourself along lines which will make you a useful member of your dental society, you will have to use the same patience and the same efforts which have brought you success in your dental operations.

DR. A. M. FLOOD.—(In discussion.) To the workers we give all praise; we all know who they are. The lazy ones ought to be ashamed, for they are sponges, and to the diffident and timid ones I say, with the essayist, brace up; give us your effort, and I promise you you will receive naught but praise and commendation and encouragement from the members, and strength and confidence will surely be the result.

You may not be aware of it, but, gentlemen, I never get on my feet in this or any gathering that my knees almost refuse to hold me up, and when I first took part in these meetings the mere thought of getting up and voicing an idea actually took my breath away; but that passed away, and now I make a bad break at it every little while.

Now, gentlemen, every president this society has ever had has worried days and nights trying to devise ways and means of arousing interest in our meetings. Every conceivable plan has been tried with varying success. But this or any society is but the expression of the sum of the individual members, consequently it rests with each member of this society to create interest and enthusiasm. Let us wake up, and not let the societies around the bay and all over the State laugh at the San Francisco society; for actually this society, so far as interest and results are concerned, is a joke. We must not permit it—*Pacific Dental Gazette*.

## DIGESTS OF ARTICLES WE OUGHT ALL TO KNOW ABOUT

Out of sight of all of us, and outside the knowledge of most of us, the devotees of medicine are working little less than miracles. The work of numberless intelligent, patient plodders is slowly reducing the area of ignorance concerning the wonderful human mechanism. Some diseases necessarily fatal a few years ago, are now susceptible of cure because of what the unknown workers accomplished.

The work described in this article may not be regarded as "practical," yet it is the kind of work which must precede practical results. Some day there will be performed a marvelous operation at which we shall all gaze; and the student will find that it has been made possible by the slow, patient accumulation of knowledge and skill which work of this kind has furnished. Such work and workers deserve our sincerest admiration.

We dentists need to know about such work. It keeps our mind broad. It furnishes inspiration to those workers in our own field who have pushed dentistry ahead with such giant strides. They may pass with their labors incomplete; their names may not be blazoned in the temples of their art; but if their labors have been true and wise, mankind will be benefited, and numberless lives they never knew will be happier and more efficient for what they did. So is our physical salvation worked out.—EDITOR.

### WORK AT THE ROCKEFELLER INSTITUTE—THE TRANS- PLANTING OF ANIMAL ORGANS

BY BURTON J. HENDRICK

IN May, seven years ago, an important meeting took place at the Arlington Hotel in Washington. On that occasion, at the invitation of Mr. John D. Rockefeller, five of the most distinguished medical men in the United States met to discuss the foundation of an institution for scientific medical research. Until this meeting, no institution devoted exclusively to this subject existed in this country. . . .

The outcome of the Washington conference referred to above was the Rockefeller Institute for medical research. Its mission is to apply, in the United States, the methods of investigation which, in other countries, have made such useful contributions to civilization. Starting in a small way, with no building of its own, and a fund of only \$200,000, it now has a large structure at Sixty-sixth Street and Avenue A, New York, and resources of nearly \$4,000,000. Its management is supervised by seven directors, all of them men of scientific eminence. Dr. William H. Welch, who, as head of the medical department of Johns Hopkins University, has done so much to create a new spirit in medical science in this country, is its president, and one of his most successful



pupils and associates, Dr. Simon Flexner is the director of its laboratory. The other members of the Board are Dr. L. Emmett Holt, Dr. T. Mitchell Prudden, Dr. Herman M. Biggs, Dr. Theobald Smith, of Harvard University, and Dr. Christian A. Herter.

The laboratory building of the Rockefeller Institute is the headquarters of fifteen or twenty enthusiasts, who have isolated themselves, in nearly all cases as young men, and given all their time to this work of research. As Edmond About said of Pasteur, they are seeking, not to cure individuals, but to cure humanity. If they make any important discovery, they give it freely to mankind, with no reward except the recognition and satisfaction of having done something worth while.

In practically every department—surgery, pathology, bacteriology, chemistry and physiology—excellent results have already been obtained. In this and subsequent articles will be described some of the most important work already accomplished.

#### A NEW METHOD OF UNITING SEVERED ARTERIES AND VEINS

Dr. Carrel, an unassuming young Frenchman, is himself a fine example of the idealistic spirit dominant in modern science. His skill as a surgeon would easily bring him a very large income; he prefers, however, the isolated work of the Institute. From the first Dr. Carrel has been a man with a fixed idea. As a medical student at the University of Lyons he conceived the possibility of utilizing healthy animal organs and vessels to do the work of those which had become diseased.

Before the transplantation of animal organs is possible, a large amount of preliminary work has to be done on the veins and arteries. The aorta, the great trunk artery, and the vena cava, the great trunk vein, lead directly from the heart down into the abdominal cavity, and, with certain important branches, connect with and largely hold in place the large abdominal organs. In order to remove the kidney, the liver or the spleen, therefore, it is first necessary to cut these great blood-vessels. Medical men had long regarded the vascular system as sacred, and to cut the aorta, in the opinion of most surgeons, would inevitably cause death. No one had yet succeeded in uniting severed blood-vessels by simple suture; in certain cases, by the use of magnesium tubes and other contrivances, this latter operation had been performed, but no experimentalist, before Carrel, had developed a method that was simple and almost invariably sure.

An examination of an animal artery sufficiently explains why surgeons should approach it with trepidation. Thin as are its walls, it is an extremely complicated structure. Viewed under the microscope,

it consists of three distinct coats or layers, each lying closely upon the other, but each absolutely distinct from its next neighbor. Each coat has its own independent part to play in the world; one provides the elasticity that makes pulsation possible, another furnishes muscular power, while the innermost section, called the intima, consists of a smooth, free surface, for immediate contact with the flowing blood. To cut these several layers and make them grow together again would in itself require great skill in surgical carpentry; what rendered it all but impossible was the blood itself. We are all fairly familiar with the common phenomenon known to surgeons as a thrombus, and to most people as a blood clot. Blood, when once freed from the artery, coagulates—forms into a sticky, glutinous substance. If a clot of any appreciable size gets into the circulation, it may land in the brain or some other vital part and cause death. It was the fear of a disaster of this kind that made surgeons hesitate to disturb a healthy artery.

#### FINE NEEDLEWORK ON BLOOD-VESSELS



A composite blood-vessel—the central portion is part of a jugular vein, the extremities are sections of carotid artery. The line of union is visible.

The discovery made by Dr. Carrel was, like most discoveries, entirely simple and elementary. He found that no elaborate contrivance, such as a magnesium tube, was necessary; that, if proper skill and proper asepsis were used, a severed artery could be simply sutured with a very small needle and very fine silk. He discovered that, in joining the severed ends, he could practically disregard the different layers of which the vessel is composed, with the exception of the innermost one. If the intima of one severed end were perfectly joined to the intima of the other end, the remaining coats would practically take care of themselves.

The whole technic developed was beautiful in its minuteness and its simplicity. It would almost require a microscope to follow it in all its details. The usual way of stopping circulation, preliminary to a surgical operation, is by the use of metal clamps, which, pinching the walls of the vessel together, check the flow of blood. Dr. Carrel found that the metal clamps wounded the artery and frequently brought about the dreaded coagulations. He, there-

fore, stopped the circulation by winding around the artery a narrow strip of linen, and pulling this tight with surgical forceps. He then cut the artery with small and extremely sharp scissors. Snipping it thus in two places, he could remove a segment of any desired length. This he carefully washed, inside and out, with a cleansing solution, in order to remove all the blood and any extraneous matter that might possibly have slipped in, and then, to protect it against new encroachments, thoroughly coated it with vaseline.

In securing this in place, either in the same animal or another, the danger of wounding the tissue, and thereby producing blood clots, again constantly threatened. Even in the little holes made by the tiny needles, diminutive coagulations might form, containing in themselves the chance of serious disturbance. To protect these holes, Dr. Carrel used another simple device; he thoroughly coated the silk thread with vaseline. As the silk passed through the walls of the artery, the vaseline was scraped off and left as a protective coating in the holes; it quickly healed the microscopic wounds and prevented thrombosis. By this operation, Dr. Carrel, or any surgeon equally skilful, could do what has always been regarded as impossible—cut the aorta of a man, at a short distance from the heart, and sew it together again. Indeed, the aorta is more easily handled than other arteries, because it is so large and tough. In cutting the aorta, the circulation would be entirely stopped in the lower part of the body and thrown into the upper; but, for the hour or less that such an operation would take, this could be done.



A similar composite, eight months after the operation, when the junctions can hardly be seen.

#### ONE DOG USES THE AORTA OF ANOTHER

On animals, by using this method, Dr. Carrel has performed many important transplantations. He has taken the aorta from one dog and sewed it into the aorta of another. He has transplanted sections of the arteries of dogs and cats with ease. . . .

More interesting still, Dr. Carrel has found that, under favorable circumstances, he can make veins do the work of arteries and arteries do the work of veins.

Since the arteries have much harder work to do than the veins, nature has made them thicker and more elastic, and physicians had hardly conceived it possible that they could be interchanged. Dr. Carrel, however, has cut out a section of the aorta of a dog, and replaced it with an equally long section of the vena cava—the largest vein—of another dog. Similarly, he has replaced part of the carotid artery—the main artery of the neck—with a corresponding part of the jugular vein. He has found that nature, when this violent change in its organization takes place, goes patiently to work to readjust matters; veins transplanted upon arteries grow thicker and elastic, so that they

may do the work of arteries; arteries transplanted upon veins lose much of their elasticity and strength.

If these operations come to be performed on man, the possibility of using veins for arteries will be of the greatest importance. The difficulty of repairing human arteries by transplantation is the practical one of getting the material. People who have healthy blood-vessels do not care to present them to



Dog upon which has been transplanted the ear, part of the scalp, and other sections of another dog.

their suffering brothers. We need all the arteries we have—not a section can be permanently removed without disastrous results. The body is filled with superfluous veins, however, and we could easily find, in our own persons, a segment of vein to take the place of a diseased artery.

#### AN ARTERY FROM A MAN'S KNEE USED IN A DOG

At present, however, this interchange is not always successful; many times a vein, in attempting to readjust itself to its new functions, overdoes the matter; its walls become so hard and thick that little space, sometimes no space at all, is left as a channel for the blood. A situation results something like arterio-sclerosis—that hardening of the arteries that works such havoc among old people. This fact has led Dr. Carrel into a new field of experimentation—a testing of the possibility of using the vessels of an animal of one species in an animal of another.

As far as blood-vessels are concerned, Dr. Carrel has discovered that the arteries of one species frequently preserve a normal existence in the

body of another species. He now has a living healthy cat which contentedly uses, as part of its circulatory system, the carotid artery of a dog. One of his associates, in Chicago, Dr. C. C. Guthrie, has successfully inserted in a dog the arteries of a rabbit and a cat. Whether the arteries of a dog can survive and do their work in a human body has not been demonstrated, but it is known that the contrary of this principle is true. Dr. Carrel now has a dog, part of whose aorta is composed of a section of artery taken from a man's knee. The animal's pulse is entirely normal; it is, indeed, in perfect health.

#### ARTERIES PRESERVED FOR WEEKS IN COLD STORAGE

Even these experiments, interesting as they are, do not entirely solve the practical problem. The use of animal vessels and organs in man is a remote possibility; if these transplantations ever become a part of regular medical practice, the material, in all probability, must be obtained from other men. The one available source of supply will then be the bodies of people recently dead. Even though the law and human nature did not revolt at this procedure, there would still be certain obstacles in the way of complete success. Among our other troubles, we should have to find, at the precise moment when we needed this extraneous matter, the particular source from which to obtain it. That the surgery of the future may not be embarrassed by difficulties of this kind, Dr. Carrel has entered a new and somewhat startling field of experimentation. If animal organs could be preserved for a considerable period outside the body, the difficulty of obtaining them at the precise moment required would be considerably lessened. The useful organs of the body could then be laid away, safe from disintegration, until the surgeon needed them. As part of his experiments, Dr. Carrel has established what is probably the most remarkable repository in existence—nothing less than a large ice-chest in which are preserved a considerable assortment of animal arteries and veins. These cold-storage blood-vessels, kept in some cases more than a month, when placed in an animal, immediately resume their functions and work indefinitely.

#### DEATH AS IT AFFECTS PERSONALITY, AND DEATH AS IT AFFECTS THE BODILY FUNCTIONS

To the unscientific citizen it is something of a surprise to learn that large parts of the body are alive and useful after the phenomenon popularly known as death has taken place. . . . This, however, is a well-demonstrated medical fact. The human heart has been removed

from the body more than thirty hours after death and made to beat again.

Science has yet framed no precise definition of death. The human body teems and quivers with life, only a small part of which becomes a part of individual consciousness.

Death, as popularly understood, is a loss of personality; the eternal separation of human consciousness from inert mortal clay. Theology teaches that the spirit lives forever—that only the body perisheth; science, on the other hand, while it says nothing about the eternal life of the spirit, teaches the immortality of the body. It may change its form, but it will never pass into nothingness. Even after death the important organs, in their existing form, live for a certain time. The heart, as has already been said, in specific cases has resisted devitalization for more than a day; the kidneys, also, can probably survive for a considerable period. The shortest-lived organ is probably the brain; this seldom lasts more than fifteen minutes after the passing of the spirit. But there are certain artificial ways in which animal tissue can be kept alive for days and weeks, perhaps for months. Nature thus gives the scientist a short breathing-space—the lapse between death as it affects personality, and death as it affects the vitality of the cell. If, in that period, the essential bodily organs are removed, they can be preserved for a long time.

#### SELF-DIGESTION OF TISSUE AFTER DEATH

Two forces, after death, begin their destructive work upon animal tissue. The first is microbial; untold millions of bacteria pounce upon the body and cause the common phenomenon of putrefaction. The other force is a comparatively recent discovery of science: the far more subtle and mysterious disintegration known as autolysis. This is a Greek word which may be freely translated as self-digestion. Food taken into the stomach is converted into certain substances—proteids, sugar and starch—by digestive ferments or enzymes, especially pepsin and trypsin. It is of these proteids, sugar and starch, that the body is composed. After death, tissue begins to disintegrate into the substances of which it was originally formed; human flesh undergoes almost the same chemical change that food undergoes in the body; in other words, it is digested. In this case the digestion, so far as science can discover, takes place without the action of specific digestive ferments. The tissues literally chew themselves to pieces; the cells possess some inherent power which they use for their own destruction. If a human body were absolutely sterilized, and thus freed from the attacks of bacteria, its dissolution, under this process of autolysis, would still go on; after a

certain period—and not a very long one—nothing would be left but a limpid fluid, and this, if resolved chemically, would leave a clear, white, powdery substance—largely the same proteids and sugar of which the living body is composed. The mortal cycle is thus complete; science rephrases the Biblical injunction: proteids we are, and unto proteids we shall return. Imperial Cæsar, dead and turned to clay, might not stop a hole to keep the wind away; a considerable part of him, however, could be served up as very palatable table sugar.

Thus, in order to preserve an organ after death, it must be protected against these two destructive forces. Against putrefaction simple sterilization suffices. An artery, for example, thoroughly disinfected, placed in an ordinary culture tube, and then closed to the access of all bacteria, will not putrefy. Under ordinary circumstances, however, it will undergo autolytic disintegration. Complete desiccation will preserve it against this latter process. Autolysis does not take place except in the presence of water; this explains why Egyptian mummies, which were thoroughly dried before being placed away in the tomb, have resisted for thirty centuries the autolytic ferment. Normal blood serum is another substance which inhibits, to a considerable degree, autolytic degeneration. Cold, while it does not entirely check the process, makes it exceedingly slow. It is upon refrigeration that Dr. Carrel has thus far chiefly depended for preserving arteries. In order to prevent putrefaction, he places them in sterilized culture tubes, and then he puts away the tubes in large ice-chests, which maintain a temperature just above the freezing-point. Here they live in a condition of suspended animation. Dry and shriveled as they appear, they are still living tissue; and, although the animals from which they have been taken have long since gone to their final rest, these fragments, if placed in a new living host, once more take up the thread of existence. That the arteries could be removed from a man recently dead and have their vitality and usefulness preserved in this same fashion, is absolutely certain.

Important as is the bearing of these experiments with blood-vessels upon the ultimate problem—the transplantation of the visceral organs and of limbs—they have many immediate practical applications in themselves.

#### A NEW AND SUCCESSFUL METHOD OF TRANSFUSING BLOOD

Dr. Carrel's work on arteries has given the world its first complete and satisfactory method of transfusing blood. Operations by which the blood of one person is injected into the circulatory system of another are not particularly new. For patients suffering from anemia—that is, an



insufficiency of healthy nutritive blood—the obvious treatment is the infusion of the precious fluid of a more fortunate person. The first successful operation of this kind was performed more than two hundred years ago. The operation, however, has never been reduced to an exact science, because of certain almost insurmountable difficulties. The great problem of transfusion has always been to get the blood from one person to another without the formation of blood clots. Hitherto, the most successful plan has been to pour the blood into a receptacle and to beat it, much as a cook beats an egg; this process separates from the blood the fibrin, the substance about which the clots are formed. At best this is a clumsy method, and the results have been far from satisfactory. Now, thanks to Dr. Carrel's work, transfusion, if undertaken by competent men, can be systematically performed. Taking an artery from the full-blooded subject, he sutures one end upon an artery of the anemic; and, by establishing a perfect circulation, the arterial systems of two people for a time become almost as one.

On a certain occasion Dr. Carrel demonstrated the value of this operation. A brother physician called him out one night to perform a transfusion upon his own infant, which was only five days old. The child was almost dead from lack of blood; indeed, to the superficial observer, life was already extinct. Dr. Carrel took the radial artery of the child's father and sutured it to the popliteal vein of the child. In a few minutes important changes followed; the child's ears became pink, its lips turned from blue to red, and soon the whole body became suffused with a healthy pink glow. Promptly the child began crying for food, and it is now as robust a baby as one could wish.

This operation and similar operations have become a regular feature of surgical practice, both in this country and in Europe. Only a short time ago a child three years old was admitted to the Babies' Hospital of New York, suffering from a large tumor of the kidney, but in such bad condition that under ordinary circumstances operation was out of the question, and it seemed as if the child must surely die. After transfusion with the blood of the father the child improved so markedly that it was considered safe to proceed with the operation. It was successfully performed, the child made an excellent recovery and is now well and strong. This is only one illustration of the numerous applications of this new principle in surgery.

#### A NEW SYSTEM OF DRAINAGE FOR HYDROCEPHALUS AND DROPSY

Another interesting application of the new blood-vessel surgery would be its use for drainage purposes. The new method of suture could

probably be used to establish a kind of conduit in the body, which might carry away the watery accretions that accumulate in certain well-known diseases. Hydrocephalus is a not uncommon affection among children; it is an accumulation of fluid in the cavities of the brain, and leads to an abnormal and sometimes monstrous development of the skull, and frequently to imbecility. A possibility suggested by Dr. Carrel would be to take a segment of vein, suture one end into the dura mater, and thus obtain a connection with the fluid in the brain; the other end could then be attached to the jugular vein. The water in the brain would thus flow by gravity into the circulation. An experiment of this nature has been successfully tried for dropsy. . . .

Important as are these transplantations of blood-vessels, however, they are merely preliminary to the far greater problem of transplanting organs.

The removal of an animal's kidneys and the insertion of new ones is an operation of tremendous complexity. Throughout the whole proceeding, the animal has the attendance of an expert trained nurse. Clad in the conventional nurse's white garb, she gives the little vagrant the same minute attention that she would give a millionaire. . . .

After disestablishing the circulation, the surgeon cuts the aorta and the great vein just above and just below the point where their branches enter the kidneys. This enables him to remove the whole urinary apparatus, and to insert in its place a new set of kidneys and accompanying blood-vessels.

#### KIDNEYS TRANSPLANTED FROM ONE CAT TO ANOTHER

Dr. Carrel has performed fourteen recorded operations of this kind. They all show a varying degree of success. The animals first experimented on lived for a comparatively short time, but the later ones lived considerably longer. One cat preserved a practically normal existence for thirty days after the operation, and in the last recorded case the cat lived thirty-six days, for the larger part of the time apparently well. The fact that all the cats operated on finally died does not mean that the experiments were not successful. Just what causes the death is not known; it may be some fault of technic which will be overcome by experience, or it may be some physical change in the kidney, involved in its transference from body to body, which is not yet understood. In order to make practical success absolutely certain, and before any one would for a moment think of using the operation upon a man, it would be necessary for a cat with transplanted kidneys to live for several years. The great point that Dr. Carrel has established is that the kid-

neys removed from one animal into another resume all their normal functions, and that a cat so operated on can live, for more than a month, in what, judging from all visible symptoms, is perfect health and contentment.

CAT GROWS FAT, AND APPARENTLY HEALTHY, WITH THE KIDNEYS OF  
ANOTHER ANIMAL

In order to demonstrate this fact it will be worth our while to follow the career of a feline famous in the history of the Institute. This was a fine young black-and-white animal, who exchanged her kidneys for those of a coal-black vagrant. A few days after this operation the animal grew cheerful, began to walk about her cage and to eat large quantities of meat. When she was released from the cage, three or four days after the operation, she ran about, climbed and played, and began to show signs of growing fat. In a week or so the cat was given almost complete liberty; she jumped about the furniture, purred, rubbed up against her human friends, ran around on the roof, and did precisely what a normal cat is expected to do. When the dressing was removed, the wound was found to be completely healed, the kidneys were in their proper places and normal in size. On the thirtieth day after the operation the animal suddenly became ill and in a few hours was dead. Throughout this period the new kidneys worked exactly like the old; secretions began almost immediately after the operation and continued uninterruptedly, and urination was frequent and without pain.

That it will be possible, with greater experience, to perform this operation upon a cat that will live indefinitely, is confidently hoped. Dr. Carrel has already demonstrated that a kidney can be taken out of an animal's body and put back, and that the animal will live indefinitely. Last February he extirpated the left kidney of a dog, and placed it away in a jar. Afterward he put the organ back. From the same dog, fifteen days later, he removed the right kidney. This he did not put back. At the present writing this dog is in perfect health. Dr. Carrel has also extirpated the spleen of a dog, washed it in a jar, and placed it back with perfect success. That is, it seems possible for an animal to live indefinitely with a transplanted kidney, if the kidney in question has been taken originally from its own body.

In the transplantation of other important organs Dr. Carrel has had permanent success. He has taken the right thyroid gland out of a dog and replanted it. As the disease of this gland is the cause of cretinism, a form of physical deformity accompanied by imbecility, it is possible that such experiments may, in future, have important practical results.

Other organs which Dr. Carrel has succeeded in transplanting by vascular suture are the suprarenal glands and the ovaries. He has now two living cats in whose bodies are the suprarenal glands of other animals; and the removal of ovaries and the transplantation of new he has accomplished many times. Other surgeons, in recent years, have successfully performed this latter operation.

#### PARTS OF TWO DOGS' LEGS GROW AS ONE

Dr. Carrel has succeeded, also, in attaching to the thigh of one dog the hind leg of another. Etherizing the first animal, the surgeon removed the left leg just below the knee, and, treating it antiseptically, carefully laid it aside, wrapped in a greased silk towel. The leg of another dog, of practically the same size and shape as the first, was amputated in the same place. The first leg was then removed from its covering and affixed to the member of the second dog. The bone was artistically juxtaposed to the bone of the new host; the muscles and nerves of the two legs were united; the veins and arteries were satisfactorily sutured, and the skin of the two animals sewed together. On the twenty-second day after the operation the dog died of distemper, contracted, it is believed, from other dogs in the Institute, who at that time were suffering from the disease. So far as the autopsy showed, the death had not been caused by the remarkable operation to which the animal had been subjected. There were no complications from the leg itself, or in the healing process, which in themselves would have caused death.



This leg, though apparently as nature made it, is really composed of parts of two hind legs of two different dogs. The point of union is just below the thigh, in the arch. Animal in prostrate position.

#### PRACTICAL RESULTS OF THE EXPERIMENTS

The question still remains as to what is the net practical outcome of these experiments. Dr. Carrel, though enthusiastic in his work, is ex-

tremely conservative in estimating the importance of results already accomplished; he is working toward a definite goal, and he would be the last to assert that he had yet reached it. This line of experimentation is practically new, and presents possibilities of such startling importance that the surgeon must carefully feel his way. It is evident, from what has already been said, that these operations indicate many lines of investigation that, when brought to completion, may revolutionize surgery and, perhaps, lead to the successful treatment of certain chronic disorders. Dr. Carrel's work clearly divides itself into two parts—one in which success has already been obtained; the other one in which important discoveries have been made and startling operations performed, which, in the opinion of conservative men, clearly indicate more remarkable results in the future.

In suturing blood-vessels, in transplanting them from one animal to another, and in preserving them before such transplantation in cold storage for weeks in good condition, Dr. Carrel has already achieved complete success. In the transplantation of organs, while as yet not having attained this complete success, he has clearly demonstrated certain principles of great importance. Before he began work we did not know that the kidney of one animal would functionate perfectly for several weeks in the body of another; we know that now. It is clear that Dr. Carrel himself believes that the experiment in making parts of two dogs' legs grow as one indicates that this operation could be successfully performed on human beings. In an address delivered before Johns Hopkins University, he declared a year ago that "it is not unreasonable to believe that some transplantations, as, for instance, the transplantation of the arm a little above the elbow, may be successfully performed if an adequate technique is used." The operation on a man would be easier than upon a dog, simply because he is larger; the muscles, the bones, the arteries and the veins could be more easily handled. Last summer, in France, Dr. Carrel experimented upon the leg of a human cadaver, and became familiar with the anatomic details involved in such an operation.

When surgery demonstrates the complete success of these transplantations, scientific ingenuity will unquestionably find some way of making them serviceable to mankind.—*McClure's Magazine*.

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It is always safest to pick the busy man when you want something done right.—*Silent Partner*.



# PRACTICAL HINTS

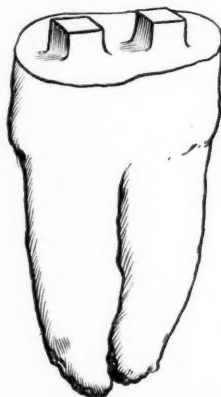
## TO MEND A BROKEN PLASTER MODEL

THE effort to mend a broken plaster model with any of the oxy-phosphate cements is likely to be much more successful if the parts to be joined are first thoroughly moistened with the cement fluid. Then mix cement thin in the usual way and apply to both surfaces. Secure adaptation and then allow the cement to set without being disturbed. Under these conditions the union is likely to be very strong.

Never mend a model which is to be subjected to high heat in the above manner. If a bridge abutment breaks off before the bridge is soldered, mend it with wax or plaster or sealing-wax. A cement repair under this condition would cause the abutment to move when heated, since the cement would boil, and ruin the bridge.

G. W. C.

## TO GRIND A VITAL TOOTH WITH A MINIMUM OF PAIN



Drawing showing the occlusal of a bicuspid ground down, but leaving the tissue intact over the horns of the pulp. This method reduces the pain to a minimum.

MANY dentists grind the occlusal surfaces of bicusps and molars extensively without devitalizing the teeth. As ordinarily done, this soon becomes very painful to the patient. The pain may be easily avoided.

The sensitive areas are found to be directly over the horns of the pulp; if these areas are avoided, grinding of the remainder of the surface will cause practically no pain.

Use a thin, clean, sharp, flat-edge carborundum stone and grind the surface as shown here, leaving the tissue above the horns of the pulp intact. When the rest of the surface has been ground enough, the little cubes may be quickly ground down, with a minimum of pain, by grinding from the sides; or they may be knocked off with a sharp chisel and a mallet. As the other grinding causes practically no pain, the patient will not mind this short hurt nearly so much.

E. S. ULSAVER.

## THE RETENTION OF LOWER PLATES BY ATMOSPHERIC PRESSURE

By D. H. YOUNG, D.D.S., UTICA, N. Y.

The editor of this magazine saw this method demonstrated and on a patient whose lower plate apparently had suction; at least it "snapped" when lifted from the lower tissues. Why not use compressed air or cold water to partly chill the impression material, rather than a fan?—EDITOR.

IN order to secure retention by atmospheric pressure for a lower plate, as demonstrated at the recent union meeting of the Seventh and Eighth District Dental Societies of the State of New York, held at Rochester, first see that the jaw has no undercuts; if there are any such they should be removed surgically. When the alveolus is thoroughly healed the impression may be taken in the following manner, and in the taking of this impression lies the secret of securing retention. As a material for taking the impression I use modeling compound.

After finding a tray of the proper size and shape for the case in hand, take a little more material upon the tray than for an ordinary impression—this is to prevent the necessity of the tray coming in close contact with the tissues, which would cause an uneven compression of the soft parts.

While the impression material is quite soft, place it in the mouth and press it down about three-quarters of the distance you desire it to go, then stop and hold it there steadily until it cools a little. During this interval I have my assistant use a little rotary fan in the dental engine, directing the cold air upon the impression material; this chills the outer layer of the material and keeps it from flowing away from the tissue when the second pressure is put upon it. I usually wait about one or two minutes for the first cooling, or until it takes five or ten pounds of pressure to force it down one-eighth of an inch farther, then hold again very steadily with about one-half the amount of pressure it took to force it down the last time, until it is quite hard. Remove and chill the impression in cold water and pour immediately.

If this method is followed out carefully, the denture being made upon this model in the ordinary way, you will find when the plate is put in the mouth that it will stick, because in taking the impression the soft compressible tissues at the point where the margin of the plate comes, as indicated by the line on the model, were compressed uniformly, and the plate having the corresponding tightness along the border when pressed down in the mouth seals itself in the soft tissues by preventing the air from getting in under its margins.—*Dental Brief*.



## NOTICES

### TENNESSEE STATE DENTAL ASSOCIATION

THE Forty-fourth Annual Meeting of the Tennessee State Dental Association will be held in Memphis, Tenn., May 25, 26, 27, 1909.

### CONNECTICUT DENTAL COMMISSIONERS

THE Dental Commissioners of Connecticut will meet at Hartford, June 24, 25, 26, 1909, to examine applicants for license to practise dentistry.

GILBERT M. GRISWOLD, *Recorder*.

### SOUTHERN WISCONSIN DENTAL ASSOCIATION

THE Fifteenth Annual Meeting of the Southern Wisconsin Dental Association will be held in Beloit, Wis., June 3 and 4, 1909.

### INTERSTATE DENTAL FRATERNITY

THE Board of Governors of the Interstate Dental Fraternity will convene for the annual business meeting of the Order at Old Point Comfort, August 1, 1909. The annual banquet will occur during the week, and due notice thereof will be sent to the members as soon as arrangements can be made and the exact date fixed. It is hoped that the Fraternity will meet in large numbers on this occasion.

DR. R. M. SANGER, East Orange, N. J.,

*National Secretary.*

### NEW HAMPSHIRE AND VERMONT DENTAL SOCIETIES

THE Joint Meeting of the New Hampshire and Vermont Dental Societies will be held at Weirs, New Hampshire, May 18 to 21, 1909.

### INDIANA STATE BOARD OF DENTAL EXAMINERS

THE next regular meeting of the Indiana State Board of Dental Examiners will be held in the State House at Indianapolis beginning Monday, June 7, 1909, and continuing four days.

All applicants for registration in this State will be examined at this meeting. This will be the last meeting of the year 1909. For further information and instructions apply to F. R. Henshaw, *Secretary*, Middletown, Indiana.

### PENNSYLVANIA BOARD OF DENTAL EXAMINERS

THE Pennsylvania Board of Dental Examiners will conduct examinations simultaneously in Philadelphia and Pittsburg, June 9, 10, 11 and 12, 1909.

For application papers, or any other information, write to DR. NATHAN C. SCHAEFFER, *Secretary*, Dental Council, Harrisburg, Pa.

## EASTERN INDIANA DENTAL ASSOCIATION

THE 1909 Meeting of the Eastern Indiana Dental Association will be held in Marion on May 8 and 9.

The 1908 meeting was postponed that all might join in the big jubilee State meeting, and this one is expected to be a record breaker. Clinics are to be the special feature.

LEONARD STRANGE, *President*.

## DENTAL SOCIETY OF THE STATE OF NEW YORK

THE Forty-first Annual Meeting of the Dental Society of the State of New York will be held in Albany, Thursday, Friday and Saturday, May 6, 7 and 8, 1909. Sessions will be held in Odd Fellows Hall, and will convene promptly at 7.30 P.M., on the evening of Thursday, May 6th.

## KENTUCKY STATE DENTAL ASSOCIATION

THE Thirty-ninth Annual Convention of the Kentucky State Dental Association will convene at Crab Orchard Springs, Ky., May 17, 18 and 19, 1909.

We anticipate a most interesting and profitable meeting at this most popular central Kentucky resort. A cordial invitation is extended to all ethical members of the profession.

W. M. RANDALL, *Secretary*.

## NEW JERSEY STATE DENTAL SOCIETY

THE New Jersey State Dental Society will hold its annual meeting in the Casino, Asbury Park, N. J., July 21-23, 1909. The Hotel Columbia has been selected as headquarters for the Society.

CHARLES A. MEEKER, *Secretary*.

## LOUISIANA STATE DENTAL SOCIETY

THE Thirty-first Annual Meeting of the Louisiana State Dental Society will be held at the St. Charles Hotel, in New Orleans, La., on Wednesday, Thursday and Friday, April 28, 29 and 30, 1909.

An interesting program is already assured.

A most cordial invitation is extended to all ethical members of the profession to be present and participate in the meeting.

DR. H. J. FELTUS, *President*,

Baton Rouge, La.

DR. J. P. WAHL, *Chairman Executive Committee*,

New Orleans, La.

DR. A. L. PLOUGH, *Corresponding Secretary*,

New Orleans, La.

## VIRGINIA STATE DENTAL ASSOCIATION

THE Fortieth Annual Session of the Virginia State Dental Association will be held at The Mecklenburg, Chase City, Va., July 21, 22 and 23, 1909. Every effort is being made to make this the most interesting and successful meeting of our Society. Men of national reputation will give clinics and read papers. All ethical practitioners are cordially invited to attend.

W. H. PEARSON, *Corresponding Secretary*.

## IOWA BOARD OF DENTAL EXAMINERS

THE next meeting of the Iowa State Board of Dental Examiners will be held at Iowa City, beginning June 7, 1909, at 9.00 A.M.

## NORTH CAROLINA DENTAL SOCIETY

THE Thirty-fifth Annual Meeting of the North Carolina Dental Society will be held at Asheville, N. C., June 23 to 26, 1909.

The Battery Park Hotel will be headquarters. All ethical dentists are cordially invited to attend.

J. C. WATKINS, *Secretary*,  
Winston-Salem, N. C.

## SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS

THE next meeting of the South Dakota State Board of Dental Examiners will be held at Sioux Falls, South Dakota, July 13, 1909, beginning at 1.30 P.M., and continuing three days.

Both practical and written examinations will be required of all candidates, and all applications together with the examination fee of twenty-five dollars must positively be in the hands of the Secretary not later than July 5th, otherwise they will not be admitted to examination.

G. W. COLLINS, *Secretary*.

## TENNESSEE BOARD OF EXAMINERS

THE next regular Annual Meeting of the Tennessee State Board of Dental Examiners will be held at Nashville, Tenn., May 18 to 21, 1909. Examinations will be held in all branches taught in dental colleges. All applications for examinations must present diplomas from reputable dental colleges, and applications for examinations should be made to the Secretary ten days prior to the meeting.

Examination fee, \$10.

F. A. SHOTWELL,  
*Secretary and Treasurer*,  
Rogersville, Tenn.

## NATIONAL ASSOCIATION OF DENTAL FACULTIES

THE National Association of Dental Faculties will hold their annual meeting in connection with the National Association of Dental Examiners in the Hotel Chamberlain, Old Point Comfort, Va., August 2, 3 and 4, 1909, commencing at 10 A.M.

Hotel rates the same as the National Association of Dental Examiners. Railroad and steamship rates given at a later date.

B. HOLLY SMITH, D.D.S.,  
*Chairman of the N. A. D. F.*

## ALUMNI ASSOCIATION OF ST. LOUIS DENTAL COLLEGE

THE Alumni Association of the St. Louis Dental College (formerly Marion-Sims) will hold their annual clinic at the college building, Grand Avenue and Caroline Street, on Thursday and Friday, May 20 and 21, 1909.

An excellent program is being prepared. All ethical members of the profession are cordially invited to be present.

DR. JOHN B. O'BRIEN,  
5761a Etzel Avenue,  
*Chairman Publicity Committee.*

DR. S. T. McMILLIN,  
*President.*

## FLORIDA STATE BOARD OF DENTAL EXAMINERS

THE next annual meeting of the Florida State Board of Dental Examiners will be held in Ocala, Fla., June 14, 1909, at 9 A.M.

## MISSOURI STATE DENTAL ASSOCIATION.

THE Forty-fourth Annual Meeting of the Missouri State Dental Association will convene at Kansas City, Missouri, May 26, 27 and 28, 1909.

A good, live program is in course of preparation.

J. F. WALLACE, *Corresponding Secretary.*

*Executive Committee:*

C. C. ALLEN, *Chairman*, Kansas City.

F. G. WORTHLY, Kansas City.

D. D. CAMPBELL, Kansas City.

## NORTHERN OHIO DENTAL ASSOCIATION

THE fifty-second annual meeting of the Northern Ohio Dental Association will be held in the Central Y. M. C. A. Building, Cleveland, O., June 1, 2, 3, 1909.

The program as arranged offers a few timely papers, a large number of helpful clinics and a generous display of instructive exhibits. The place of meeting is convenient. Cleveland provides diversity of entertainment for the visitors. On the whole everything is in keeping to provide a profitable three days for the men in attendance.

F. M. CASTO,

G. F. WOODBURY,

J. H. WIBLE,

*Executive Committee.*

## IOWA STATE DENTAL SOCIETY

THE Forty-seventh Annual Meeting of the Iowa State Dental Society will be held in Des Moines, Iowa, May 4, 5 and 6, 1909. All ethical dentists are urged to attend.

T. F. COOKE, *Secretary.*

## KENTUCKY STATE BOARD OF DENTAL EXAMINERS

THE Kentucky State Board of Dental Examiners meets the first Tuesday in June, at 8 A.M., in the Louisville College of Dentistry, for the examination of applicants for certificate.

All applicants must be graduates of a reputable dental college.

Application blanks for examination will be furnished by the secretary on request, which, with the fee of \$20, must be in his hands 10 (ten) days before date of examination.

J. RICHARD WALLACE, D.D.S., *Secretary,*

The Masonic, Louisville, Ky.

## BOARD OF DENTAL EXAMINERS OF CALIFORNIA

THE next examination of the Board of Dental Examiners of California will be held in Los Angeles, beginning June 3d. This will be followed by an examination in San Francisco on June 15th.

C. A. HERRICK, *Secretary.*

## INDIANA STATE DENTAL ASSOCIATION

THE fifty-first annual meeting of the Indiana State Dental Association, to be held at Indianapolis, June 29-30, and July 1, will be a profitable meeting to those attending; a meeting that will be noted for its many practical suggestions.

C. D. Lucas, Chairman of the Executive Committee, has completed arrangements

for six excellent papers. Four of these from our own State and two from special guests outside the State.

W. S. Kennedy, Supervisor of Clinics, promises the largest, the best, and the most practical clinic in our history.

OTTO U. KING, *Secretary*.

#### THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS

THE Twenty-seventh Annual Meeting of the National Association of Dental Examiners will be held at the Hotel Chamberlain, Old Point Comfort, Va., first session opening at 10 o'clock A.M., Monday, August 2, 1909, and continuing the 3d and 4th.

The result of the mail vote by the committee to ascertain the consensus of opinion as to place and date from October 19th to the present date was ninety-one votes for Old Point Comfort the first three days of August, thirteen for Birmingham in March, seven for Birmingham in July. The president has therefore selected Old Point Comfort.

The rates will be, American plan, \$3 per day, without bath; \$4 per day, with bath. Large and commodious meeting rooms will be furnished free. Railroad and steamship rates will be furnished at a later date.

CHARLES A. MEEKER, D.D.S., *Secretary*.

#### SUSQUEHANNA DENTAL ASSOCIATION OF PENNSYLVANIA

THE Annual Meeting of the Susquehanna Dental Society will convene at the Oneonta Hotel, Harvey's Lake, May 18th, 19th and 20th. This meeting has always been largely attended, and as Harvey's Lake is a popular place and centrally located, the society expects to outdo its previous records.

The Exhibit Room will be a big feature this year, and those desiring space will do well to engage it early, as some firms have already spoken for space. All applications for such should be addressed to the undersigned as soon as possible.

FULLER L. DAVENPORT,

34 North Franklin Street, Wilkes-Barre, Pa.

#### *Exhibit Committee:*

F. L. DAVENPORT, *Chairman*.

A. E. BULL.

WALTER RICHARD.

#### ILLINOIS STATE DENTAL SOCIETY

THE Forty-fifth Annual Meeting of the Illinois State Dental Society will be held at Danville, May 11, 12, 13, 14, 1909.

R. J. HOOD, *Secretary*,

Sparta, Ill.

#### ILLINOIS STATE BOARD OF DENTAL EXAMINERS

THE next regular meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practise dentistry in the State of Illinois will be held in Chicago at the Chicago College of Dental Surgery, S. E. corner Wood and Harrison Streets, beginning Thursday, June 10, 1909, at 9 A.M.

Candidates will be furnished with proper blanks and such other information as is necessary on application to the Secretary. All applications must be filed with the Secretary five days prior to the date of examination. The examination fee is twenty (\$20) dollars, with the additional fee of five (\$5) dollars for a license.

Address all communications to

J. G. REED, *Secretary*,

1204 Trude Building, Chicago, Ill.

## TEXAS STATE BOARD OF DENTAL EXAMINERS

THE regular meeting of the Texas State Board of Dental Examiners will be held in Waco, Texas, beginning 9 A.M. Monday, June 14, 1909. Diplomas not recognized, or registered; examinations required of all. Applications, accompanied by a fee of \$25, should be in the Secretary's hands June 10th. For further information, address

BUSH JONES, *Secretary*,  
Dallas, Texas.

NEW JERSEY STATE BOARD OF REGISTRATION AND EXAMINATION  
IN DENTISTRY

THE New Jersey State Board of Registration and Examination in Dentistry will hold their semi-annual examination beginning Tuesday, July 6th, and continue through the 7th and 8th, in the Assembly Chamber of the State House at Trenton, N. J. Practical examination on the 6th, and theoretical examination 7th and 8th. Sessions begin promptly at 8 A.M. each day. Candidates requested to bring their patients.

Practical work consists of one gold filling and one amalgam. Gold filling must be approximal with an approximating tooth in position, and soldering of plate. A photograph and preliminary credentials must accompany the application.

Application to be in the hands of the Secretary ten days prior to the examination.

CHARLES A. MEEKER, D.D.S.,  
*Secretary of Dental Commission*,  
29 Fulton Street, Newark, N. J.

PROGRAM OF AMERICAN MEDICAL ASSOCIATION, SECTION ON  
STOMATOLOGY

MEETING AT ATLANTIC CITY, JUNE 8-11, 1909

1. Chairman's Address.....Edward C. Briggs, Boston, Mass.
2. Enamel and its Vitality.....R. R. Andrews, Cambridge, Mass.
3. A Study of Mal-nutrition in the School Child....E. Mather Sill, New York City
4. Suppression of the People's Disease.....S. B. Luckie, Chester, Pa.
5. The Role of the Teeth in Respiration.....F. L. Stanton, New York City
6. Oral Prophylaxis.....Alphonse Irwin, Camden, N. J.
7. The Tonsils and the Teeth.....G. Hudson-Makuen, Philadelphia, Pa.
8. Mouth Conditions in their Relation to Systemic Infection,  
Frederick K. Moorehead, Chicago, Ill.
9. The Surgery of Cleft Palate.....George V. I. Brown, Milwaukee, Wis.
10. General Therapeutics and Surgery in Dentistry,  
Arthur R. Dray, Philadelphia, Pa.
11. Conservative Surgery for Treatment of Tumors of the Mandible,  
Thomas L. Gilmer, Chicago, Ill.
12. A Method of Treating Mandibular Fractures,  
Robert T. Oliver, West Point, N. Y.
13. The Treatment of Extreme Degrees of Mal-occlusion of the Teeth by Operations  
Upon the Ramus of the Inferior Maxillary Bone,  
Wayne B. Babcock, Philadelphia, Pa.
14. Osteomyelitis of the Jaw.....H. H. Germain, Boston, Mass.
15. Report of two Record Tertiary Cases.....G. Lenox Curtis, New York City
16. Tri-facial Neuralgia.....Fred Hussey, Providence, R. I.
17. Anesthesia.....L. C. Noel, Nashville, Tenn.

18. A Summary of Thirteen Thousand Nitrous Oxid and Oxygen Anesthetics,  
Charles K. Teter, Cleveland, O.
19. Pseudo-pulpitis Due to Rheumatoid Arthritis.....William Mills, Baltimore, Md.
20. Dental Roentgenology.....G. E. Pfahler, Philadelphia, Pa.
21. Report of the Committee of Revision of Pharmacopœia,  
Hermann Prinz, *Chairman*, St. Louis, Mo.  
G. B. Squires, Somerville, Mass.
22. Report of the Committee on Vital Statistics,  
George V. I. Brown, *Chairman*, Milwaukee, Wis.  
Vida A. Latham, Chicago, Ill.  
Frederick K. Moorehead, Chicago, Ill.  
EDWARD C. BRIGGS, *Chairman*.  
EUGENE S. TALBOT, *Secretary*.

## DEATHS

DR. NELLIE B. FRENCH died April 1, 1909, at her home in West Superior Street, Fort Wayne, Ind. Dr. French was born at Dayton, O., June 3, 1864. In 1889 she entered the dental office of Dr. S. S. Brown to take up the study of dentistry. In 1897 she successfully passed the State examination and began the practise of dentistry, succeeding Dr. Brown after the death of the latter. She was a member of the Isaac Knapp Dental Coterie, and was universally esteemed by a wide circle of friends to whom her death will cause most heartfelt sorrow.

HENRY B. COFFIN died at his home in Albina, Ore., March 10, 1909.

AMERICUS V. BARDEEN died at Hamilton, Ill. He was 81 years old, and had practised dentistry for many years.

GEORGE P. MILES, of Brooklyn, N. Y., died March 24, 1909, of pneumonia. He was in his seventy-fourth year.

EDWIN G. LEE, of Baltimore, Md., died March 31, 1909, after a long illness. Dr. Lee was 39 years old.

F. G. MCCOLLUM, Cambridge, Mass., died April 1, 1909. He was in his forty-second year.

HENRY TUREILL, of Rutland, Vt., aged 77 years, died March 30, 1909. Dr. Tureill had practised dentistry for 49 years.

D. D. WEISSELL, one of the oldest dentists in Fort Wayne, Ind., died March 9, 1909. He was 76 years old.

W. E. TEEL, dentist, aged 47 years, died at St. Louis, Mo., March 22, 1909.

## PATENTS

913184. Tooth-brush, C. L. Alexander, Charlotte, N. C.
913210. Artificial tooth, M. F. Henle, Lyons, Ia.
914501. Tooth-brush, D. McEachern, Argyle, Ontario, Canada.
915349. Tooth-brush, J. L. Hitz, Chicago, Ill.
915137. Dental plugger, W. Weichselbaum, Savannah, Ga.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.



## ROBBERIES

Drs. H. W. Dodge and L. R. Brown, Hutchinson, Kan., gold filling; Dr. George White, Pittsburg, Kan., gold; Dr. R. C. Maxwell, Wichita, Kan., \$32.50 of materials; Dr. Ira Balone, Salpula, Okla., \$40 worth of gold; Drs. J. Wetzel and A. O. McCutcheon, Springfield, Mo., gold, gold scrap and dress materials; Dr. W. A. Cox, Omaha, Neb., \$20 in money; Dr. Sternberg, Fort Smith, Ark., gold scrap, \$45 worth, and a ring at \$15; a number of dentists of Springfield report robberies of gold; Dr. Richards, Enid, Okla., \$65 in cash, several hundred dollars in checks; Drs. Lyonn and Heatherly, Drs. Heer and Carpenter; gold; H. G. Fitzgerald & Co., dentists of Chicago, Ill., safe robbed and gold fillings said to be worth \$2,300, and \$400 in cash.

## NEWS SUMMARY

**HEADS THE DENTIST.**—Dr. Earl Westenhaber, a former Iowa City young man and a graduate of the dental college with the class of 1904, is now president of the Northwestern Dental Association of Oklahoma.—*Davenport Democrat*.

**DR. G. W. BOURNE**, who for the past five years has successfully practised dentistry at 8 Union Street, in West Newark, has removed his office to 71-2 South Third Street.—*Newark (O.) Advocate*.

**BIG SEA CLIFF INDUSTRY.**—A certificate of incorporation of the Trenaman Dental Manufacturing Company of the village of Sea Cliff has been filed with the State Department. The capital stock is \$50,000, and the directors are Joseph Trenaman and T. F. Clack of New York City and Caesar Simis of Sea Cliff.—*Brooklyn Eagle*.

**DENTISTS MEET.**—The Wood County Dental Society held a profitable meeting March 13, at which Dr. Elson of this city, and Dr. Park of Prairie Depot, were received into membership.

At the evening session Dr. E. J. Frowine gave a clinic on "Regulating," which brought out an interesting discussion.—*Bowling Green, (O.) Democrat*.

**DR. J. B. MONFORT** of this city was elected president of the Alumni Dental Association of the State University, Iowa City. He was a member of the first class sent out from this institution, that of '83.—*Wilkes-Barre Record*.

**NORTHWESTERN DENTAL SOCIETY MEETING.**—The third semi-annual meeting of the Northwestern Dental Society came to a close March 17. The meetings were reported to be the most successful ever held by the society. A banquet was served the visitors in the basement of the First M. E. Church. Kearney was decided upon as the next place to hold the convention. The new officers elected are: C. C. Farrell, Cozad, president; W. S. Morrow, Kearney, vice-president; Miss Mabel Dixon, Hastings, secretary and treasurer. Messrs. Douglas of Hastings, Chamberlin of Gothenberg and Jones of Kearney, board of trustees.

**MET IN EASTON AT THE OFFICE OF DOCTOR J. B. ZELLER.**—The Lehigh Valley Dental Society convened at the office of Dr. J. B. Zeller, in Easton, on Monday evening, March 22d. At the conclusion of the regular business, Dr. J. C. Hertz gave a clinical demonstration by chart of the removal of pulp from the more inaccessible pulp canals. Dr. J. B. Zeller also gave a clinic on a novel method of attaching a bridge to a cuspid by gold inlay.—*Allentown Call*.

**ASHEVILLE DENTAL ASSOCIATION MEETING.**—The monthly meeting of the Asheville Dental Association was held in the offices of Dr. J. A. Sinclair March 17th. Officers were elected as follows: President, Dr. E. C. Chambers; vice-president, Dr. C. F. Glenn; secretary, Dr. J. A. Sinclair. Dr. I. M. Mann was appointed to the census board.—*Asheville Citizen*.

**DENTISTS MEET TO PERFECT DETAILS.**—A meeting of several prominent members of the Michigan State Dental Association, including President Lyons of Jackson and Vice-President Copp of Plainwell, was held at the Burdick March 26th for the purpose of discussing the details of the State convention to be held here in June.

It has practically been assured that the railroads will make low tariffs for the convention and the attendance promises to be larger than for some years past. The program to be given at the convention will consist of papers and discussions by prominent men of the profession and social entertainment is being planned by the committees in charge of the same. It is proposed to make this one of the most successful conventions in the history of the association.

**NATIONAL DENTAL ASSOCIATION MEETING.**—Features of the general session of the convention of the National Dental Association Wednesday, March 31, were the election of officers and the selection of Denver, Colo., as the next place of meeting on the third Thursday in July, 1910, agreed upon by the new executive council.

The new constitution is a matter upon which the association has been hard at work for the past year, and is designed to provide a very large increase in the membership through the admission of State associations as a whole.

Under the plan recommended by the executive council, the executive council will be replaced with a house of delegates consisting of fifteen members. Five of these will come from each of the three geographical divisions designated as the east, west and south. They will be agreed upon by caucuses from the sections, and reported to the convention at Denver in 1910 when the new constitution is adopted.

**Officers Elected.**—The election of officers was gone into at one o'clock. It resulted as follows: President, Dr. B. L. Thorpe, St. Louis, Mo.; vice-president from the South, Dr. T. P. Hinman, Atlanta, Ga.; vice-president from the West, Dr. W. T. Chamber, Denver, Colo.; vice-president from the East, Dr. Charles W. Rodgers, Boston, Mass.; corresponding secretary, Dr. H. C. Brown, of Columbus, Ohio; recording secretary, Dr. C. S. Butler, Buffalo, N. Y.; treasurer, Dr. A. R. Melendy, Knoxville, Tenn.—*Birmingham News*.

**DENTAL ASSOCIATION FORMED.**—An organization among the resident dental doctors has been formed for mutual benefit. It is known as the Victoria Dental Association. The object in view is to hold regular meetings when papers may be read or addresses given, dealing with subjects connected with the profession. Vancouver has a similar association and has been found useful.

The local body has now about twenty-two members and on the afternoon of March 20th the first meeting was held.

The officers of the local association are: President, Dr. Ford Verrinder; vice-president, Dr. R. Nash; secretary-treasurer, Dr. P. C. Thomas; executive committee, Dr. A. Humber, Dr. A. J. Thomas and Dr. John Harper. The association will embrace all the dentists on Vancouver Island.—*Victoria, B. C., Times*.

**MEETING OF KANKAKEE DISTRICT DENTAL ASSOCIATION.**—At the annual meeting of the Kankakee District Dental Association held in Dr. A. C. Willman's office March 12th, a large attendance was present and an interesting meeting was held. The election resulted as follows:

President, I. B. Johnson, of Onarga; vice-president, J. E. Willman, of Peotone; secretary, J. D. Welch, of Kankakee; treasurer, Adam Lind, of Kankakee.—*Kankakee Gazette*.

**THE KANSAS CITY SOCIETY DISCUSSED THE CARE OF THE GUMS.**—The proper care of the gums was the subject under discussion at the monthly meeting of the Kansas City Dental Society at the Hotel Baltimore March 12th. The dentists call it prophylaxis and pyorrhoea, but it's all the same thing. About fifty dentists were present. Dr. Frank B. Jahr, president of the society, was toastmaster. The principal speakers were Dr. W. A. Caston, of Topeka and Dr. J. D. Patterson.

TENNESSEE STATE DENTAL ASSOCIATION.—The annual election of officers was held and arrangements made for the forty-fourth annual convention of the Tennessee State Dental Association, to be held here May 25-26, and discussed Friday night, March 26th, at one of the most important meetings of the Memphis Dental Society held in months.

The election of officers resulted as follows:

C. E. Hines, president; G. E. West, vice-president; T. E. Scheuford, recording secretary and treasurer, and W. E. Lundy, corresponding secretary.—*Memphis Scimitar*.

DR. STURGIS ON DENTAL BOARD.—Governor Swanson has appointed Dr. W. M. Sturgis, of Norfolk, a member of the State Board of Dental Examiners in the place of Dr. R. H. Walker of the same city, who has resigned.

Dr. Walker, the retiring member, was secretary and treasurer of the board.—*Richmond Journal*.

WATERLOO DENTAL SOCIETY CHOOSES YEARLY OFFICERS.—The Waterloo Dental Society held the annual business meeting and election of officers last evening, March 24th, in the offices of Dr. H. A. Boysen in the Commercial Building. There was a good attendance, Dr. C. B. Miller, of Cedar Falls, was the only out of town member present. The new officers chosen for the year are:

President, Dr. S. F. Heverly; vice-president, Dr. C. B. Miller, of Cedar Falls; secretary and treasurer, Dr. C. N. Shane.—*Waterloo Courier*.

DENTAL GREEKS GIVE DINNER.—About fifty of the active members of Psi Chapter of Psi Omega Fraternity, composed of members of the senior class in dentistry in Starling (Ohio) Medical College, held their eighth annual banquet on the evening of March 19th, at the Northern Hotel. Dr. N. J. Brown was toastmaster. The banquet is expected to be the last meeting of many of those present, as they will soon be graduated and scattered.—*Columbus Journal*.

THE ELECTRO DENTAL PARLORS filed a list of officers with the county clerk, March 25th, as follows: R. Lybrook Shanklin, president; F. P. Shanklin, secretary. Both the officers named, with M. M. Weaver, are trustees.—*Tacoma Ledger*.

### NATIONAL DENTAL ASSOCIATION

THE thirteenth annual meeting of the National Dental Association, held at Birmingham, Ala., March 30th to April 2nd, was a most successful one with a good attendance. The papers and discussions were exceedingly interesting and held the close attention of large audiences throughout. Official action was taken providing for a National Dental Journal, commencing October, 1910.

The committee on revision of Constitution and By-Laws presented a number of amendments embodying a liberal plan of reorganization. Copies carrying the proposed changes are to be printed and mailed to the membership, which will give ample opportunity to thoroughly understand same before final action is taken.

The following officers were elected: President, Burton Lee Thorpe, St. Louis, Mo.; vice-president for the West, W. T. Chambers, Denver, Colo.; vice-president for the East, Charles W. Rodgers, Boston, Mass.; vice-president for the South, Thomas P. Hinman, Atlanta, Ga.; corresponding secretary, H. C. Brown, Columbus, O.; recording secretary, Charles S. Butler, Buffalo, N. Y.; treasurer, A. R. Melendy, Knoxville, Tenn. Executive committee (new members for three years): C. M. Work, Ottumwa, Iowa; V. H. Jackson, New York City; W. G. Mason, Tampa, Fla.; Executive Council; H. J. Burkhart, Batavia, N. Y.; B. Holly Smith, Baltimore, Md.; A. H. Peck, Chicago, Ill.; W. E. Boardman, Boston, Mass.; C. L. Alexander, Charlotte, N. C.

Denver, Colo., and the third Tuesday of July, 1910, were chosen as the place and date of the next meeting.

H. C. BROWN, *Cor. Sec'y*.